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Oct 77

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CALENDAR FOR WATER YEAR 1976

1975

OCTOBER

S	M	T	W	T	F	S
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NOVEMBER

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1976

JANUARY

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Water Resources Data
for
Washington

Water Year 1976

Volume 2. Eastern Washington

U.S. DEPARTMENT OF THE INTERIOR
MARCH 3, 1849

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WA-76-2

**Prepared in cooperation with the State of Washington
and with other agencies**

UNITED STATES DEPARTMENT OF THE INTERIOR

THOMAS S. KLEPPE, Secretary

GEOLOGICAL SURVEY

V. E. McKelvey, Director

For additional information write to
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1977

PREFACE

This report was prepared by personnel of the Washington district of the Water Resources Division of the U.S. Geological Survey under the supervision of J. E. McCall, District Chief, and W. H. Robinson, Regional Hydrologist, Western Region. It was done in cooperation with the State of Washington and with other agencies.

This report is one of a series issued by State. General direction for the series is by J. S. Cragwall, Jr., Chief Hydrologist, U.S. Geological Survey, and G. W. Whetstone, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for Washington are in two volumes as follows:

Volume 1. Western Washington
Volume 2. Eastern Washington

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WATER RESOURCES DATA FOR WASHINGTON, 1976

INTRODUCTION

Water resources data for the 1976 water year for Washington consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels of ground water. This report contains discharge records for 248 gaging stations; stage only records for 3 gaging stations; stage and contents for 44 lakes and reservoirs; water quality for 123 gaging stations, 1 partial-record station, and 7 lakes; and water levels for 108 observations wells. Also included are 172 crest-stage partial-record stations and 1 low-flow partial-record station. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Washington.

Volume 2 of this report contains data for Eastern Washington and is defined as the Upper Columbia River Basin, the Snake River Basin and the Lower Columbia River Basin upstream from the White Salmon River Basin. Volume 1 of this report contains data for Western Washington and is defined as the Pacific Slope Basins and that portion of the Lower Columbia River Basin downstream from and including the White Salmon River Basin.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cites in the Unites States or may be purchased from Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, Va. 22304.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report WA-76-2." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of Washington have had cooperative agreements for the systematic collection of surface-water and water-quality records since 1909. Organizations that supplied data are acknowledged in the station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

Washington State Department of Ecology, J. A. Biggs, director
Washington State Department of Fisheries, D. W. Moos, director
Washington State Department of Highways, William A. Bulley, director
Washington State Department of Game, Ralph W. Larson, director
City of Port Angeles, C. R. Willson, mayor
City of Seattle, Department of Lighting, Gordon Vickery, superintendent
Municipality of Metropolitan Seattle, Richard S. Page, executive director
City of Tacoma, Department of Public Utilities, A. J. Benedetti, director
City of Tacoma, Department of Public Works, Ronald M. Button, director
Tulalip Tribal Board of Directors, G. S. Williams, chairman
Yakima Tribal Council, Watson Totus, chairman

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 44 gaging stations; the U.S. Environmental Protection Agency, in collecting records for 12 water-quality stations; the U.S. Energy Research and Development Administration, in collecting records for 6 water-quality stations; the Bureau of Reclamation, U.S. Department of Interior, in collecting records for 18 gaging stations; the U.S. Department of State, in collecting records for 13 gaging stations; the Bonneville Power Administration, in collecting records for 4 gaging stations.

The following organizations aided in collecting records:

The cities of Bellevue and Everett; Crown Zellerbach Corporation; Intercounty River Improvement; ITT Rayonier; King County Department of Public Works; Pacific Power and Light Co., Public Utility Districts No. 1 of Chelan County, No. 1 of Cowlitz County, No. 1 of Douglas County, No. 2 of Grant County, No. 1 of Pend Oreille County; Puget Sound Power and Light Co.; Skagit County Engineer; Spokane Tribe of Indians; University of Washington, through its Fisheries Research Institute; Washington Public Power Supply System; Washington Water Power Co.; Whatcom County Engineer.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report are defined below. See also table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, ac-ft) is a quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic metres.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Bacteria are microscopic unicellular organisms, typically spherical, rod-like, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse of plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of samples.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material

Cells /volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonacous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloro-platinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/s, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the amount of substance present in true chemical solution. In practice, however, the term includes all forms of substance that will pass through a 0.45-micrometer membrane filter, and thus may include some very small (coloidal) suspended particles. Analyses are performed on filtered samples.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\overline{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution area, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Partial-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillienth (1 x 10^{12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7 x 10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those higher green plants. Some forms produce algal mats or floating "moss in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-e weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station such as 12041000, which appears just to the left of the station name, includes the 2-digit part number "12" plus the 6-digit downstream order number "041000".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1 below.

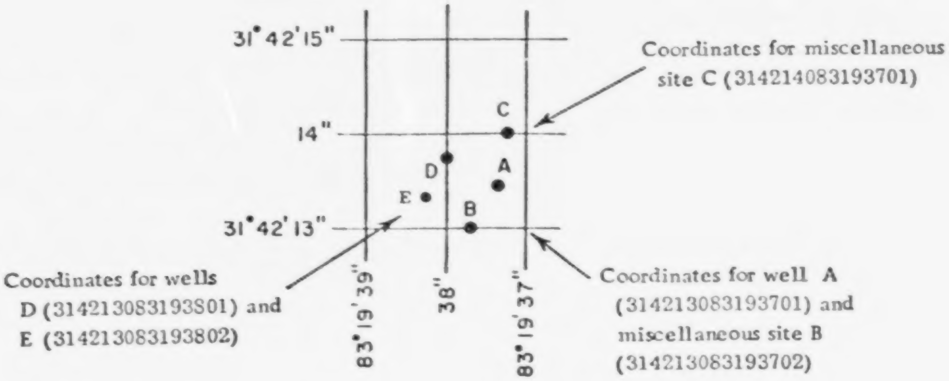
31°42'15"
14"
31°42'13"
C
D
A
E
B
83°19'39"
38"
83°19'37"
Coordinates for miscellaneous site C (314214083193701)
Coordinates for wells D (314213083193801) and E (314213083193802)
Coordinates for well A (314213083193701) and miscellaneous site B (314213083193702)

Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National strean-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly samples water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are samples represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text-books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), stepbackwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the staion and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lake and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations or revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE", it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR: if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dated of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight untake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

All temperature values in the daily tables are rounded to the nearest 0.5°C. Therefore, temperature values published in conjunction with water samples may be 0.1 to 0.2°C outside the range of the values published in the daily tables.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During period of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 1.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

HYDROLOGIC CONDITIONS

The annual runoff in eastern Washington during the 1976 water year ranged generally from 115 to 135 percent of average. August cloudbursts in the central and southeastern part of the area caused flooding and considerable damage in isolated sections.

Streamflow for October varied from average to much above average over the area. In November, December and January, streamflow was generally above average caused by a series of storms and heavy snowmelt. The highest December monthly mean flow of record was recorded for the Wenatchee River at Peshastin. Streamflow for February through June was generally average to slightly above. July through September produced flows significantly above average. The highest August monthly mean flow of record was recorded at the Kettle River near Laurier, while the Wenatchee River at Peshastin had the third highest August monthly mean of record and the fourth highest September mean. Monthly and annual mean discharges are compared with medians at two representative gaging stations in figure 2.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-one manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A. of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publications, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Picket Street, Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature-influential factors, field measurement, and data presentation,* by H. H. Stevens Jr., J. F. Ficke, and G. F. Smoot: USGS-TWRI Book 1, Chapter D1. 1975. 65 p. $1.60.

2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. $1.90

2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. $1.75.

3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. $0.25.

3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages. $0.20.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages. $0.40.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages. $1.00.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages. $0.30.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Capter A6, 1968, 13 pages. $0.20.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages. $0.45.

3-A8. *Discharge measurements at gaging stations,* T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. $1.25.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. $0.40.

3-A12. *Fluorometric procedures for dye tracing,* by J. F. Wilson Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. $0.35. Not currently available.

3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages. $0.70.

3-B2. *Introduction to ground-water hydraulics-a programed text for self-instruction,* by D. S. Bennett: **USGS--TWRI Book 3, Chapter B2. 1976.** 172 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. $0.65.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2, 1970. 59 pages. $0.70.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. $1.15.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4 Chapter A1. 1968. 39 pages. $0.30.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. $0.20.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages. $0.65.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. $0.75.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. $0.75.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. $0.65.

5-A1. *Methods for collection and analysis of water samples for dissolved minerals and gases*, by Eugene Brown, M. W. Skougstad, and M. J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 pages $2.40.

5-A2. *Determination of minor elements in water emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. $0.80.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. $0.90.

5-A4. *Methods for collection and anlysis of aquatic biological and microbiological samples*, by K. V. Slack, R. C. Averett, P. E. Greeson, and R. G. Lipscomb: USGS--TWRI Book 5, Chapter A4. 1973. 165 pages. $1.95.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1960. 58 pages. $0.65.

7-C1. *Finite-difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. $0.70.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. $0.40.

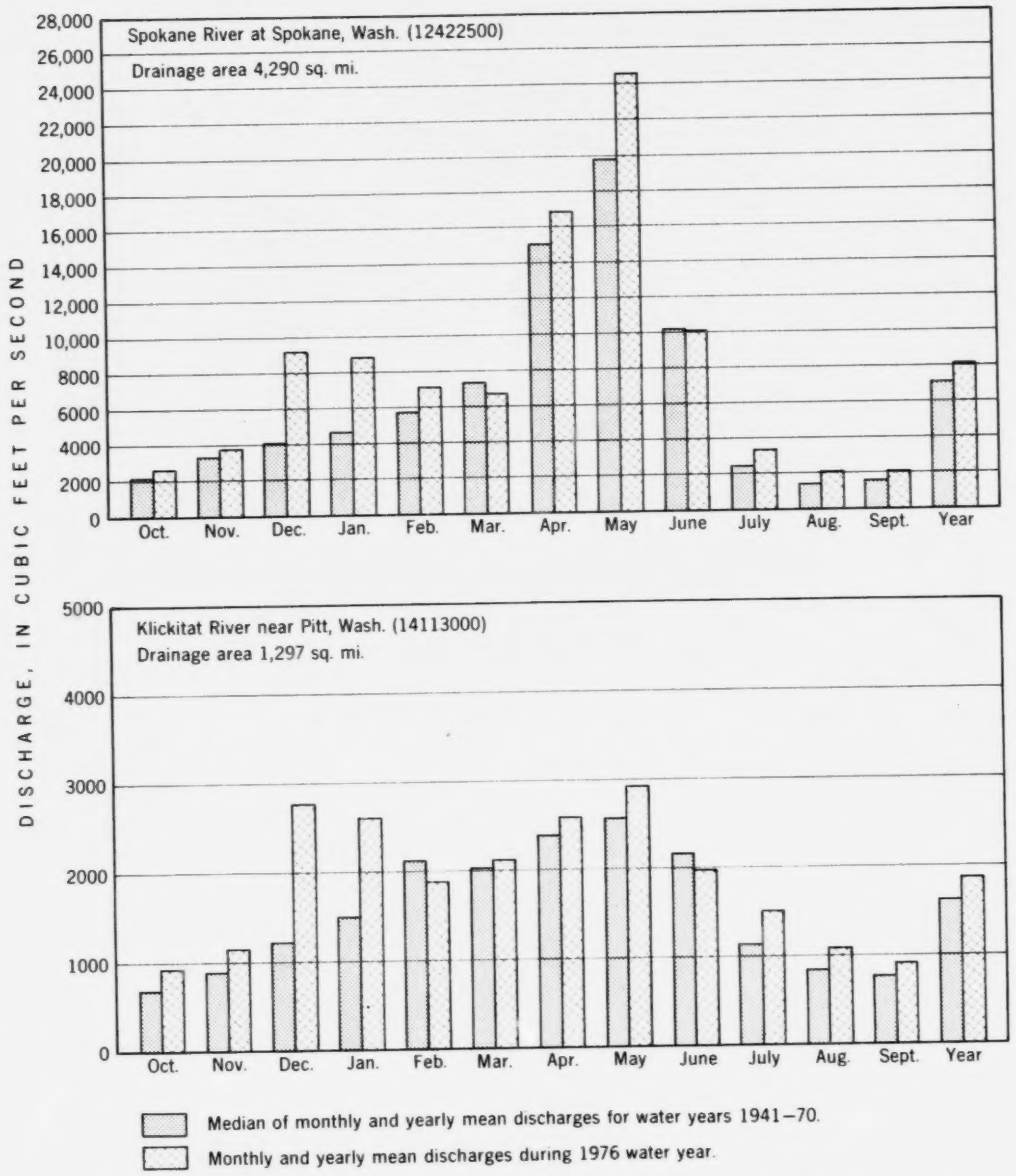

FIGURE 2.--Discharge during 1976 water year compared with median discharge for period 1941–70 for two representative gaging stations.

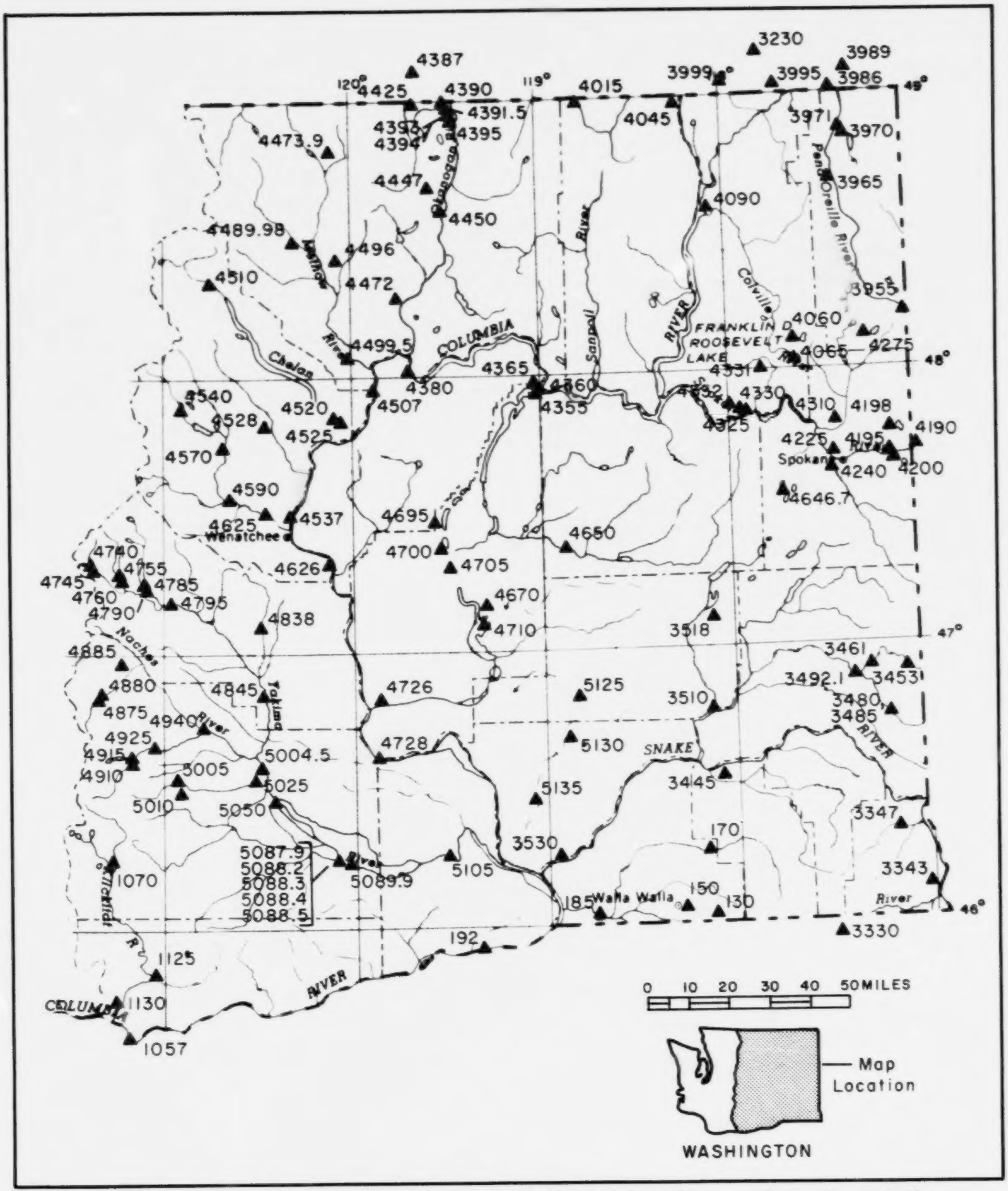
120°
119°
48°
47°
46°
49°
4387
4425
4390
4391.5
4393
4394
4395
4473.9
4447
4450
4489.98
4496
4510
4472
4499.5
4380
4365
4360
4355
4015
4045
3999
3230
3995
3989
3986
3971
3970
3965
4090
3955
4060
4065
4275
4331
4332
4330
4325
4310
4198
4190
4225
4195
4200
4240
4646.7
Spokane
4540
4528
4520
4525
4507
4570
4590
4625
4537
Wenatchee
4695
4700
4705
4650
4626
4740
4745
4755
4785
4760
4790
4795
4838
4670
4710
3518
4885
4880
4845
4875
4940
4726
5125
3510
3461
3492.1
3453
3480
3485
4925
4915
4910
5005
5004.5
5025
4728
5130
5135
3445
5010
5050
3347
1070
5087.9
5088.2
5088.3
5088.4
5088.5
5089.9
5105
3530
170
3343
185
150
130
3330
192
1125
1130
1057
Walla Walla
COLUMBIA
RIVER
Chelan
Methow
Okanogan
Sanpoil
Colville
Pend Oreille River
FRANKLIN D. ROOSEVELT LAKE
Naches
Yakima
SNAKE
Klickitat R
0 10 20 30 40 50 MILES
Map Location
WASHINGTON

Figure 3. Map of Eastern Washington showing locations of gaging stations operated by the U.S. Geological Survey in cooperation with other agencies. Numbers shown are abbreviated versions of complete station number used in text.

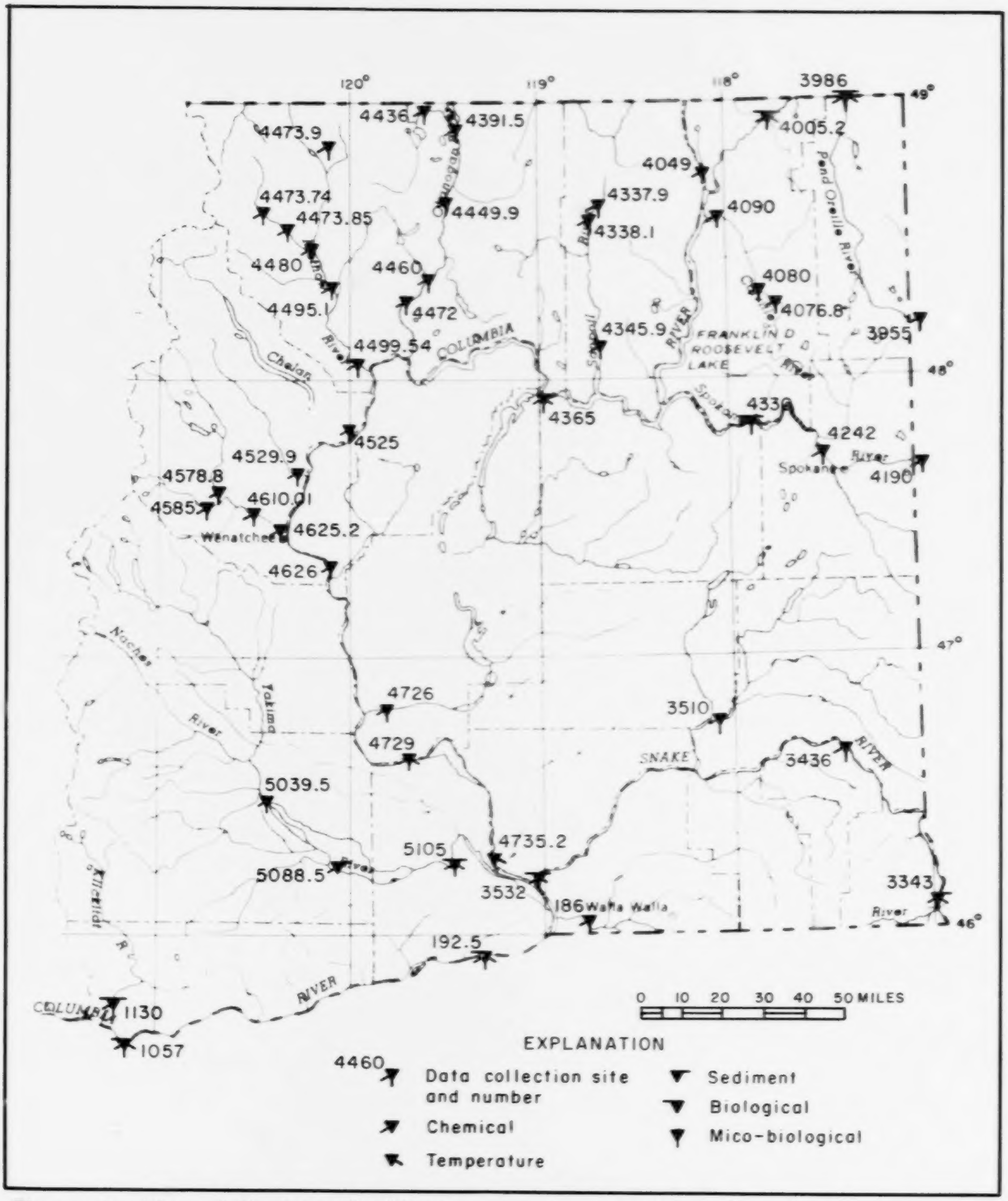
120°
119°
118°
49°
48°
47°
46°
3986
4436
4391.5
4473.9
4005.2
4049
4337.9
4338.1
4473.74
4473.85
4449.9
4090
4480
4460
4080
4076.8
4495.1
4472
4345.9
3955
4499.54
COLUMBIA
FRANKLIN D ROOSEVELT LAKE
Chelan
River
RIVER
Pend Oreille River
Spokane
4365
4336
4242
4525
4529.9
Spokane
River
4190
4578.8
4610.01
4585
4625.2
Wenatchee
4626
Naches
River
Yakima
4726
3510
4729
SNAKE
3436
RIVER
5039.5
5105
4735.2
5088.5
River
3532
3343
186
Walla Walla
River
192.5
Klickitat R
COLUMBIA
1130
1057
RIVER
0 10 20 30 40 50 MILES
EXPLANATION
4460
Data collection site and number
Chemical
Temperature
Sediment
Biological
Mico-biological

Figure 4. Map of Eastern Washington showing locations of surface-water-quality sampling stations operated by the U.S. Geological Survey in cooperation with other agencies. Numbers shown are abbreviated versions of complete station number used in text.

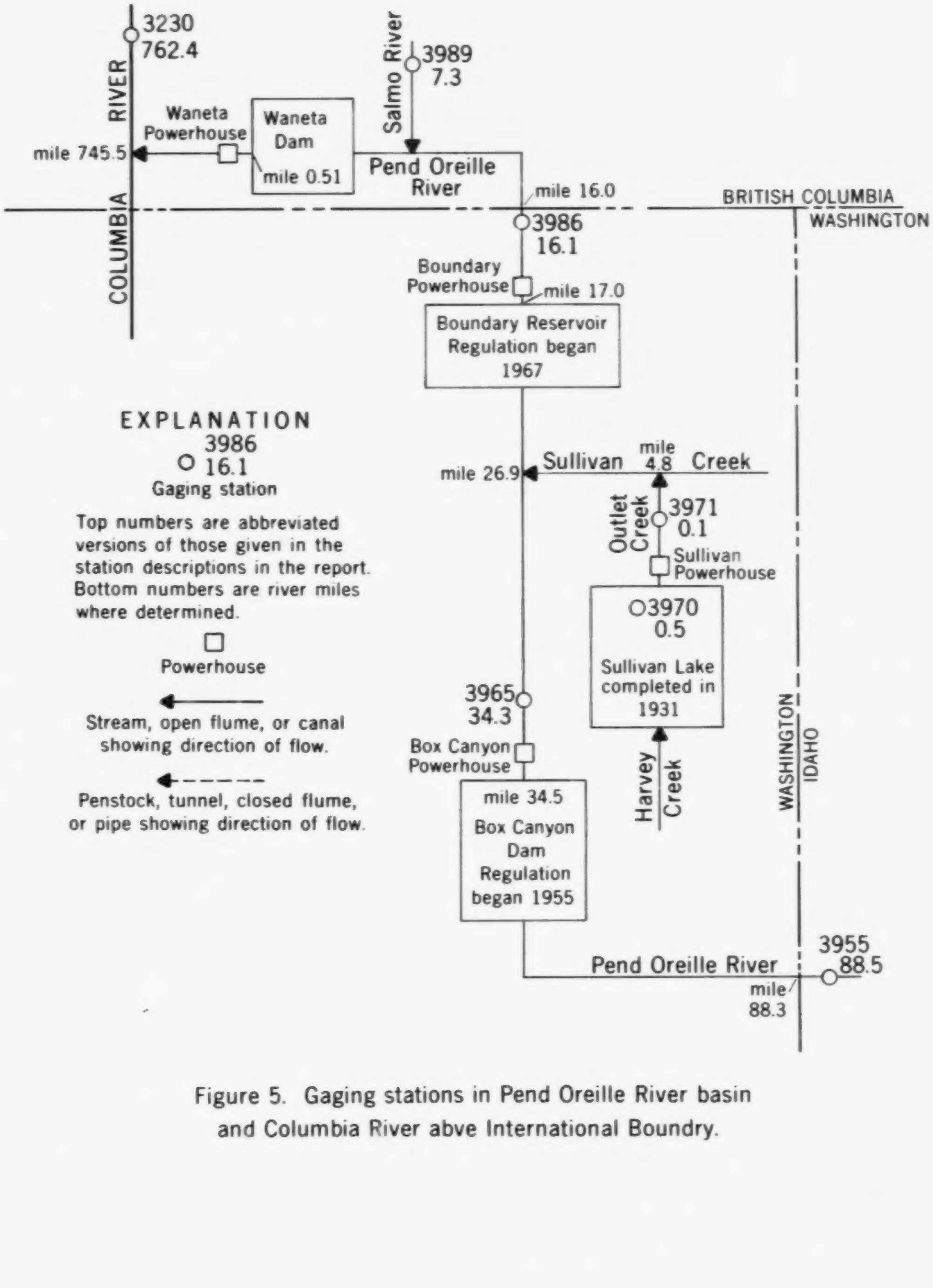
3230
762.4
COLUMBIA RIVER
mile 745.5
Waneta Powerhouse
Waneta Dam
mile 0.51
Salmo River
3989
7.3
Pend Oreille River
mile 16.0
BRITISH COLUMBIA
WASHINGTON
3986
16.1
Boundary Powerhouse
mile 17.0
Boundary Reservoir Regulation began 1967
EXPLANATION
3986
16.1
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
mile 26.9
Sullivan Creek
mile 4.8
Outlet Creek
3971
0.1
Sullivan Powerhouse
3970
0.5
Sullivan Lake completed in 1931
3965
34.3
Box Canyon Powerhouse
mile 34.5
Box Canyon Dam Regulation began 1955
Harvey Creek
WASHINGTON
IDAHO
Pend Oreille River
3955
88.5
mile 88.3

Figure 5. Gaging stations in Pend Oreille River basin and Columbia River abve International Boundry.

12323000 COLUMBIA RIVER AT BIRCHBANK, BRITISH COLUMBIA
(International gaging station)

LOCATION.--Lat 49°10'40".long 117°42'59", on right bank at Birchbank, British Columbia, 0.7 mi (1.1 km) downstream from Sullivan Creek, 7 mi (11.3 km) upstream from Trail, 11.7 mi (18.8 km) downstream from Kootenay River, 17.4 mi (28.0 km) upstream from international boundary, and at mile 762.4 (1,226.7 km).

DRAINAGE AREA.--34,000 mi^2 (88,100 km^2), approximately.

PERIOD OF RECORD.-- April 1913 to current year. Published as "at Trail, British Columbia" 1913-37.

REVISED RECORDS.--WSP 982: 1942. WSP 1216: 1949.

GAGE.--Water-stage recorder. Datum of gage is 1,329.90 ft (405.354 m) above mean sea level, 1947 international joint adjustment, published as 1,338.00 ft (407.822 m) prior to October 1948. Prior to Oct. 1, 1937, nonrecording gage on highway bridge at site 6.8 mi (10.9 km) downstream at datum 16.27 ft (4.959 m) lower.

REMARKS.--Records excellent. Flow regulated by six major reservoirs, and by numerous small reservoirs and powerplants. Diversions above station for irrigation of about 25,000 acres (101 km^2).

COOPERATION.--This station is maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--63 years, 71,410 ft^3/s (2,022 m^3/s), 51,740,000 acre-ft/yr (63,800 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 377,000 ft^3/s (10,700 m^3/s) June 9, 1961, gage height, 50.05 ft (15.255 m); maximum gage height, 50.62 ft (15.429 m) June 11, 1948; minimum discharge observed, 8,940 ft^3/s (253 m^3/s) Feb. 3, 1967, gage height, 6.27 ft (1.911 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 194,000 ft^3/s (5,490 m^3/s) Aug. 27, gage height, 33.36 ft (10.168 m); minimum daily, 27,700 ft^3/s (784 m^3/s) Oct. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43200	59000	74700	74500	77400	60200	53000	68800	81700	84700	152000	117000
2	41900	61900	74800	74200	71800	46000	64300	62000	79300	83900	172000	119000
3	42600	65600	71700	74400	72000	52300	62900	56400	76600	81400	190000	124000
4	42300	66200	60600	64000	71500	62300	62900	49700	74700	91000	191000	119000
5	44100	66500	55500	62700	70600	61800	63300	53500	73100	81000	184000	117000
6	39300	66400	54500	62100	70500	60200	62700	53200	71300	80400	172000	151000
7	45500	66400	53200	61500	74400	57300	54000	60200	71300	81700	163000	176000
8	48800	65900	42400	62100	81400	54400	44500	77100	71400	83700	156000	166000
9	45700	58700	41200	61300	91500	55700	35400	94800	79400	89600	160000	147000
10	47900	49300	43800	65700	89500	50700	30100	110000	87100	95600	171000	113000
11	41900	44300	46000	75000	99400	62100	31200	115000	87900	96000	168000	86300
12	39300	46300	45500	81000	98700	61700	32700	102000	87400	96900	153000	81800
13	40800	43900	47200	80700	97400	61300	33400	100000	88300	94700	137000	91200
14	44300	40300	52600	81200	99800	57100	35300	103000	85800	105000	123000	92200
15	45400	45000	64100	81100	79500	62200	36600	104000	85200	117000	133000	85700
16	47800	48000	64900	81300	54500	52700	34500	105000	86500	134000	148000	76200
17	43100	64300	65200	80900	56400	56200	35200	107000	87300	157000	175000	63500
18	38700	71200	63800	83000	56100	55800	35300	104000	89000	172000	187000	58800
19	32100	70600	63700	85700	51900	51900	35100	97100	89900	178000	174000	68100
20	30500	65200	59200	86200	51800	55100	35400	97600	90300	179000	155000	65800
21	33000	70600	58200	86500	54800	65500	35900	96800	86700	174000	144000	89400
22	32900	67600	68300	86000	53300	70600	37600	95600	80300	151000	132000	95600
23	27700	67500	69300	84900	53200	69900	34000	95500	74700	133000	113000	96800
24	29400	67700	78100	86300	52400	70000	36300	96800	78200	118000	104000	87600
25	29800	67800	83100	83900	52600	69900	38900	95400	76900	122000	117000	78700
26	40800	68400	82400	83000	52300	69000	42900	88000	75000	140000	161000	72300
27	50400	66600	82200	82400	52200	68700	51700	87000	73000	162000	185000	69900
28	50800	67000	83800	83200	51700	66100	72000	87900	72100	168000	165000	70800
29	49200	64900	85200	83200	55500	63300	74000	87000	74500	161000	153000	71300
30	52200	68900	82200	82800	---	62900	75200	84600	80200	148000	144000	70500
31	51800	---	75000	82600	---	63000	---	83800	---	147000	124000	---
TOTAL	1292400	1844900	1992300	2407800	2002900	1878200	1386700	2718800	2417100	3801600	4806000	2942700
MEAN	41690	61500	64270	77670	69070	60590	46220	87700	80570	122600	155000	98090
MAX	52200	71200	85200	86500	99800	70600	75200	115000	90300	179000	191000	176000
MIN	27700	40300	41200	61300	51700	46000	30100	49700	71300	80400	104000	58800
AC-FT	2563000	3659000	3952000	4776000	3973000	3725000	2751000	5393000	4794000	7540000	9533000	5837000

CAL YR 1975 TOTAL 22168500 MEAN 60740 MAX 178000 MIN 27700 AC-FT 43970000
WTR YR 1976 TOTAL 29491600 MEAN 80580 MAX 191000 MIN 27700 AC-FT 58500000

12395500 PEND OREILLE RIVER AT NEWPORT, WA

LOCATION.--Lat 48°11'00", long 117°02'00", in SE¼SW¼ sec.24, T.56 N., R.6 W. (Boise Meridian, Bonner County, Hydrologic Unit 17010216, on left bank at Newport, 0.2 mi (0.3 km) upstream from bridge on U.S. Highway 2, 0.2 mi (0.3 km) east of Idaho-Washington State line, 1.6 mi (2.6 km) downstream from Albeni Falls Dam, and at mile 88.5 (142.4 km).

DRAINAGE AREA.--24,200 mi² (62,700 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1903 to September 1941, October 1952 to current year. Prior to October 1921, published as Clark Fork at Newport, Wash., October 1921 to September 1937, as Clark Fork at Priest River, Idaho, and October 1937 to September 1941, as Pend Oreille River at Priest River, Idaho.

REVISED RECORDS.--WSP 532: 1903-11.

GAGE.--Water-stage recorder. Datum of gage is 1,999.7 ft (609.509 m) above mean sea level. Prior to Sept. 22, 1928, nonrecording gages at Priest River, Newport, or Metaline Falls at various datums (see description, WSP 532, p. 92). Sept. 22, 1928, to Sept. 30, 1935, at datum 2,040.14 ft (621.835 m) above mean sea level, and Oct. 1, 1935, to Sept. 30, 1941, at datum 2,000 ft (609.6 m) above mean sea level, water-stage recorder at Priest River. Since December 1952, auxiliary water-stage recorder 2.74 mi (4.41 km) downstream from base gage.

REMARKS.--Records good. Flow regulated at Albeni Falls Dam and affected by storage in Pend Oreille Lake (see sta 12392500), Flathead Lake, Hungry Horse Reservoir, and several smaller reservoirs. Diversions above station for irrigation of about 354,000 acres (143,000 hm²).

AVERAGE DISCHARGE.--62 years (water years 1903-41, 1952-76), 26,190 ft³/s (742 m³/s), 18,970,000 acre-ft/yr (23.4 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 136,000 ft³/s (3,850 m³/s) June 15, 1913, June 21, 1933, June 12, 1972; minimum, 1,280 ft³/s (36 m³/s) Sept. 1, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 64.0 ft (19.51 m) in June 1894, present site and datum, from water-surface profiles (discharge, about 200,000 ft³/s or 5,660 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 98,300 ft³/s (2,780 m³/s) May 22; maximum gage height, 46.73 ft (14.243 m) May 22; minimum discharge, 7,110 ft³/s (201 m³/s) Sept. 19; minimum gage height, 31.41 ft (9.574 m) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17000	32000	24400	25200	21500	27500	25800	44700	84600	55100	17100	14200
2	17000	31700	24600	26300	22500	27700	25300	45600	80100	54400	19400	16700
3	24500	31400	24500	25600	24800	28600	25000	47400	78100	51900	19200	18300
4	25200	27300	28900	20900	25900	26500	23400	48100	74500	49800	20800	16100
5	25300	21300	30200	15900	25900	25000	24800	48400	67000	46000	19400	14500
6	25700	21300	30600	17400	25700	19600	24900	48600	62800	42800	17600	13700
7	25600	21300	30600	17200	23300	19300	25100	49900	60500	41000	17100	13500
8	25500	22500	31000	18500	22900	19400	24000	52200	59200	39500	14700	12400
9	25400	31300	31100	20500	22100	19300	27000	55800	59200	38000	17900	11200
10	25600	31100	28300	21700	20300	19400	38800	61700	59300	38800	19100	11900
11	25500	30300	27900	21200	19500	18200	39000	68000	58900	41900	18300	12400
12	25500	30900	30600	21900	21200	17300	42200	73400	59000	47300	17200	12300
13	25700	30500	31100	22800	22700	17700	47200	78700	59000	47900	19600	11400
14	25600	30200	31000	24400	21000	21900	49400	82900	57300	43600	16600	10400
15	25400	30100	31100	26900	21300	21800	49500	86400	52400	40200	16300	10600
16	25500	30100	30500	25600	24500	26400	49100	89300	50400	37600	21000	12800
17	25600	29200	28800	21700	28700	26200	48900	91000	51100	35200	21700	12200
18	25300	28900	26700	21200	28200	24600	48700	94000	55100	33100	21900	12200
19	31400	28900	24500	21400	29200	22200	48600	95400	58400	32500	21800	9540
20	32700	28900	23400	22900	25000	20100	44300	96100	58200	27100	21800	13200
21	32700	16800	27700	23300	22200	20200	48000	96900	57100	25500	21600	19900
22	32500	13200	27400	22200	22200	21400	47600	96700	54400	25700	17400	21600
23	32800	13300	26200	16100	22100	23800	47100	95800	55700	24100	17200	21600
24	32600	16100	21000	11700	22100	26600	46300	95500	58700	22900	22100	21500
25	32500	17200	16300	10900	23400	24500	46400	95100	56800	25300	23600	21500
26	32200	19100	17500	10800	24500	28800	45900	95500	52800	25800	21600	21300
27	31900	19400	21200	23300	24500	28700	43900	94800	50400	29000	17400	21500
28	31800	20200	23500	25700	24600	28700	42300	94600	48200	22700	16200	21500
29	31800	20500	25700	25600	26800	28600	43300	94600	49800	20500	16200	21500
30	31900	20800	25600	22500	---	29500	44000	93700	54400	19900	20000	21600
31	32000	---	26000	21500	---	27700	---	93200	---	17200	16800	---
TOTAL	859700	746300	829000	656800	688500	743200	1190300	2404500	1783400	1102300	588600	473040
MEAN	27730	24880	26740	21190	23740	23970	39680	77560	59450	35560	18990	15770
MAX	32800	32000	31100	26900	29200	29500	49500	96900	84600	55100	23600	21600
MIN	17000	13200	16300	10800	19500	17300	23400	44700	48200	17200	14700	9540
AC-FT	1705000	1480000	1644000	1303000	1366000	1474000	2361000	4769000	3537000	2186000	1167000	938300

CAL YR 1975 TOTAL 10902710 MEAN 29870 MAX 102000 MIN 4590 AC-FT 21630000
WTR YR 1976 TOTAL 12065740 MEAN 32970 MAX 96900 MIN 9540 AC-FT 23930000

12395500 PEND OREILLE RIVER AT NEWPORT, WA--Continued

WATER-QUALITY RECORDS

LOCATION.--At bridge on U.S. Highway 2 at Newport, 0.2 mi (0.3 km) downstream from gage.

PERIOD OF RECORD.--Water years 1959-69, 1973-74, October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
07...	0930	25300	175	7.8	13.5	25	18	10.7	140	18
20...	1000	32800	150	7.4	11.8	30	4	9.6	75	<5
NOV										
10...	1045	31000	165	7.6	9.7	32	7	10.4	110	<5
17...	0830	29000	165	7.3	6.5	35	10	9.3	160	20
DEC										
08...	1100	31100	165	6.8	5.1	30	23	8.7	175	11
15...	0900	31100	165	7.8	4.4	12	11	9.8	150	16
JAN										
05...	1130	17200	160	7.2	3.4	10	21	11.1	120	8
20...	0910	24100	170	7.0	4.5	10	20	10.6	120	--
FEB										
02...	0950	21600	170	7.6	3.0	10	35	14.1	85	10
23...	1115	22400	175	6.8	2.9	8	1	8.0	90	8
MAR										
08...	1000	19300	145	6.4	2.0	14	9	11.0	110	18
22...	0815	20700	175	6.2	2.4	10	2	12.7	185	24
APR										
12...	1030	42000	170	6.5	7.1	16	3	11.7	90	21
26...	0830	45400	155	6.7	6.9	18	2	9.3	115	14
MAY										
10...	0745	59100	155	6.6	9.5	22	15	10.7	99	16
24...	0815	96000	145	7.5	11.0	10	5	8.8	180	12
JUN										
07...	0930	60900	130	6.8	14.5	18	10	10.7	150	20
22...	1030	52300	135	6.9	13.0	24	7	14.3	140	10
JUL										
12...	0945	48600	145	7.4	17.2	25	7	10.5	155	11
26...	1000	24600	135	6.7	21.0	11	6	11.2	100	<10
AUG										
09...	1030	16000	145	7.0	20.0	15	8	11.2	85	<10
23...	1030	17200	145	6.2	18.8	7	4	9.9	95	<10
SEP										
13...	0930	11600	140	7.3	16.4	11	5	9.3	145	18
27...	1015	21500	150	6.8	17.5	9	6	9.8	85	<10

DATE	CARBONATE (CO3) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
07...	0	.01	.03	.01	.01	0	3	3	.0	10
20...	0	.01	.08	.01	.00	2	2	3	.0	4
NOV										
10...	0	.02	.06	.02	.01	<10	1	3	.0	0
17...	0	.02	.03	.01	.00	0	2	14	.0	0
DEC										
08...	0	.06	.06	.01	.00	0	8	500	.2	20
15...	0	.05	.03	.01	.00	0	2	3	.2	0
JAN										
05...	0	.06	.06	.01	.00	0	3	7	.0	10
20...	0	.08	.09	.02	.00	0	4	9	.0	20
FEB										
02...	0	.04	.09	.02	.00	0	3	8	.0	0
23...	0	.06	.01	.01	.00	10	2	6	.0	0
MAR										
08...	0	.05	.16	.02	.00	0	3	4	.0	10
22...	0	.05	.17	.02	.00	0	4	8	.0	20
APR										
12...	0	.02	.12	.02	.00	0	4	9	.0	10
26...	0	.06	.10	.03	.01	0	4	8	.0	10
MAY										
10...	0	.01	.08	.03	.00	0	4	11	.1	50
24...	0	.04	.07	.03	.00	0	5	10	.0	0
JUN										
07...	0	.02	.09	.03	.00	0	8	14	.0	0
22...	0	.02	.05	.01	.00	10	4	11	.0	20
JUL										
12...	0	.01	.12	.01	.00	0	2	9	.0	10
26...	0	.06	.10	.01	.00	0	4	6	.0	0
AUG										
09...	0	.03	.07	.01	.00	0	3	10	.0	10
23...	0	.04	.10	.02	.00	0	4	20	.0	10
SEP										
13...	0	.01	.03	.02	.00	0	4	19	.0	10
27...	0	.01	.09	.01	.00	0	4	10	.0	10

12396500 PEND OREILLE RIVER BELOW BOX CANYON, NEAR IONE, WA

LOCATION.--Lat 48°46'52", long 117°24'55", in SE¼NE¼ sec.19, T.38 N., R.43 E., Pend Oreille County, Hydrologic Unit 17010216, on left bank 1,000 ft (305 m) downstream from Box Canyon Dam, 2.8 mi (4.5 km) north of Ione, and at mile 34.3 (55.2 km).

DRAINAGE AREA.--24,900 mi^2 (64,500 km^2), approximately.

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Mar. 29, 1954, nonrecording gage at site 300 ft (91 m) upstream at same datum. Mar. 29, to Aug. 25, 1954, nonrecording gage at present site and datum. Since Aug. 20, 1967, auxiliary water-stage recorder 1.2 mi (1.9 km) downstream at same datum.

REMARKS.--Records excellent. Flow completely regulated by Box Canyon Reservoir, 1,000 ft (305 m) upstream since June 1955 and by Pend Oreille Lake, Flathead Lake, Hungry Horse Reservoir, and by several smalller reservoirs and powerplants. In 1946 there were diversions for irrigation of 340,000 acres (1,380 km^2) above the station.

AVERAGE DISCHARGE.--24 years, 9,100 ft^3/s (824.1 m^3/s) 21,080,000 acre-ft/yr (26,000 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 136,000 ft^3/s (3,850 m^3/s) June 13, 14, 1972; maximum elevation, 2,014.54 ft (614.032 m) June 14, 1972; minimum observed discharge, 125 ft^3/s (3.54 m^3/s) Apr. 23, 1967 (result of regulation).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1948 reached elevation of 2,018.00 ft (615.086 m), from floodmarks, discharge, 167,000 ft^3/s (4,730 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge,88,400 ft^3/s (2,500 m^3/s) Ma 22; maximum elevation, 2,007.52 ft (611.892 m) May 23; minimum daily discharge, 8,900 ft^3/s (252 m^3/s) Sept. 20, minimum elevationn, 1,984.06 ft (604.741 m) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17800	32300	21800	26600	20900	27500	28300	47700	67700	54000	16100	14200
2	18300	32100	23900	26500	23100	28300	27600	48600	82500	54100	17200	13800
3	21900	32000	24200	26000	24600	28100	26100	51800	80100	53600	18000	16500
4	23000	30700	27200	24700	25500	28000	24900	54400	76800	51800	19100	16900
5	25100	26600	29000	21600	25400	28100	24300	52900	69700	48300	19300	15300
6	25300	22100	28800	18500	25600	24000	25700	52800	65700	43500	17600	13700
7	26900	21200	31900	18000	25100	22200	25700	55800	61000	41000	17300	13600
8	27000	23400	33400	17700	23700	20300	25900	57600	59500	38400	16100	12600
9	25400	28200	33300	19100	22200	20100	26200	61000	58800	37400	15800	11300
10	25600	28900	32800	21000	20500	20000	37100	68700	58600	37700	16700	11500
11	25900	28800	30700	20500	20400	19700	41100	71000	58900	39100	17000	11700
12	25300	29200	31600	20600	20200	18100	43500	72500	58900	45300	16900	10500
13	26600	29400	31800	22000	18900	17500	49500	78600	59000	48500	16900	10500
14	26300	31800	31800	23100	21700	19000	53200	81100	59100	44300	18200	10300
15	26400	34800	31800	24600	23400	24000	53800	83400	56300	39400	14700	9540
16	26700	34000	32100	25800	24400	26300	53800	85800	54500	37400	18100	10400
17	28500	30900	31000	24300	28700	26000	53700	83500	53500	34300	18700	11600
18	27500	30200	28700	21900	28600	25400	53600	83400	54600	31800	19800	10400
19	28300	28900	27300	21600	28500	24100	53500	84900	57500	31100	20100	10800
20	30400	29000	25300	21600	26500	22300	51700	87300	58000	29100	20100	8900
21	29100	25100	25800	22800	24100	20900	51400	88200	58200	27000	20400	15300
22	31300	17000	27400	23800	24300	21200	52100	88400	57100	25000	19300	20600
23	35700	13500	27400	20900	22900	23400	51800	88200	55000	24400	17400	21600
24	35700	13700	25500	13000	23100	26300	51700	87800	58000	23200	17500	22400
25	35400	16500	19300	12600	23700	28400	50800	87200	57700	23200	23100	22300
26	34800	19000	17700	12600	24100	28700	48500	86500	55200	23600	23400	22100
27	32200	21600	20000	17100	24400	28800	49000	87100	53000	25500	19300	22100
28	30500	20100	21400	23600	25300	29000	48400	87000	50500	25500	16400	21500
29	30300	20300	24600	25300	25900	29300	46900	85800	49000	20900	16100	21700
30	31500	20600	25700	24200	---	30400	47000	86400	51100	19400	16100	22000
31	32100	---	26100	21300	---	29900	---	85100	---	18000	17600	---
TOTAL	866800	771900	849300	662900	695700	765300	1276800	2320500	1817500	1095800	560300	455640
MEAN	27960	25730	27400	21380	23990	24690	42560	74850	60580	35350	18070	15190
MAX	35700	34800	33400	25600	28700	30400	53800	88400	87700	54100	23400	22400
MIN	17800	13500	17700	12600	18900	17500	24300	47700	49000	18000	14700	8900
AC-FT	1719000	1531000	1685000	1315000	1380000	1518000	2533000	4603000	3605000	2174000	1111000	903800

CAL YR 1975 TOTAL 11316560 MEAN 31000 MAX 103000 MIN 4920 AC-FT 22450000
WTR YR 1976 TOTAL 12138440 MEAN 33170 MAX 88400 MIN 8900 AC-FT 24080000

12397000 SULLIVAN LAKE NEAR METALINE FALLS, WA

LOCATION.--Lat 48°50'21", long 117°17'15", in SW¼NE¼ sec.31, T.39 N., R.44 E., Pend Oreille County, Hydrologic Unit 17010216, Colville National Forest, 200 ft (61 m) south of dam at outlet, 4.0 mi (6.4 km) southeast of Metaline Falls.

DRAINAGE AREA.--51.2 mi² (132.6 km²).

PERIOD OF RECORD.--May 1912 to September 1923, January 1959 to current year (fragmentary).

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is at mean sea level (levels by Pend Oreille County Public Utility District). Prior to Sept. 30, 1923, nonrecording gage on dam at outlet of lake at different datum.

REMARKS.--Lake elevation is controlled by concrete dam. Some small diversions for domestic use.

COOPERATION.--Elevation record furnished by Public Utility District No. 1 of Pend Oreille County.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 2,589.94 ft (789.414 m) July 15, 1975; minimum observed, 2,564.00 ft (781.507 m) on many days during period Jan. 6 to Mar. 25, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum elevation observed, 2,588.80 ft (789.066 m) June 17, Aug. 26, and Sept. 1; minimum observed, 2,564.42 ft (781.635 m) Mar. 18.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2588.30	2576.70	2569.50	---	---	---	2564.48	---	2584.50	2588.25	2588.20	2588.80
2	---	2576.40	2569.30	---	---	---	---	---	2584.80	2588.30	2588.25	---
3	---	2576.10	2569.20	---	---	---	---	---	2585.10	2588.35	2588.30	---
4	2587.90	2575.85	2569.30	---	---	2564.52	---	---	2585.35	---	2588.35	---
5	2587.45	2575.55	2569.50	---	2565.05	---	---	---	2585.60	2588.30	2588.40	---
6	2587.00	2575.20	2569.60	---	---	---	---	2569.70	---	2588.30	2588.40	---
7	2586.55	2575.00	2569.70	---	---	---	---	2570.10	---	2588.25	2588.40	---
8	2586.10	2574.70	2569.80	2571.55	---	---	---	2570.80	2586.00	2588.25	---	---
9	2585.70	2574.40	2569.90	---	---	---	---	---	2586.35	2588.20	---	---
10	2585.20	2574.15	2569.90	---	---	---	---	2572.35	2586.60	2588.20	---	---
11	2584.80	2573.90	2570.00	---	---	2564.45	---	2573.60	2587.00	---	---	---
12	2584.30	2573.60	2570.10	---	2564.82	---	---	2574.30	2587.50	2588.15	---	---
13	2583.95	2573.30	2570.10	2570.00	---	---	---	2575.10	---	2588.20	2588.50	---
14	2583.50	2573.00	2570.20	---	---	---	---	2575.80	2588.00	2588.20	---	---
15	2583.00	2572.80	2570.20	2569.52	---	---	2565.82	2576.50	2588.25	2588.20	---	---
16	2582.65	2572.65	2570.30	---	---	---	---	---	2588.70	2588.20	---	---
17	2582.25	2572.40	---	---	---	2564.44	---	2577.70	2588.80	2588.20	---	---
18	2581.80	2572.20	---	---	---	2564.42	---	2578.15	2588.75	---	---	---
19	2581.35	2572.00	---	---	---	---	---	2578.70	2588.70	2588.20	2588.70	---
20	2580.98	2571.80	---	---	---	---	---	2579.10	---	2588.20	---	2588.14
21	2580.60	2571.50	---	---	---	---	---	2579.70	2588.65	2588.25	---	---
22	2580.20	2571.30	---	2566.65	---	---	---	2580.10	2588.65	2588.25	---	---
23	2579.80	2571.10	---	---	---	---	---	---	2588.65	2588.25	---	---
24	2579.40	2570.90	---	---	---	---	---	2581.00	2588.55	2588.25	---	---
25	2579.00	2570.65	---	---	---	---	---	2581.50	2588.45	---	---	---
26	2578.70	2570.45	---	---	2564.62	---	---	2582.00	2588.35	2588.25	2588.80	---
27	2578.35	---	---	---	---	---	---	2582.40	---	2588.25	---	---
28	2578.05	2570.05	---	---	---	---	---	2582.95	2588.30	2588.20	---	---
29	2577.70	2569.80	---	2565.54	---	---	2567.52	2583.30	2588.25	2588.20	---	---
30	2577.42	---	---	---	---	---	---	---	2588.25	2588.20	---	2588.05
31	2577.05	---	2571.70	---	---	---	---	2584.10	---	2588.20	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

12397100 OUTLET CREEK NEAR METALINE FALLS, WA

LOCATION.--Lat 48°50'42", long 117°17'12", in SW¼SE¼ sec.30, T.39 N., R.44 E., Pend Oreille County, Hydrologic Unit 17010216, Colville National Forest, on right bank 0.1 mi (0.2 km) upstream from mouth, 0.4 mi (0.6 km) downstream from Sullivan Lake Dam, and 4 mi (6.4 km) east of Metaline Falls.

DRAINAGE AREA.--51.5 mi^2 (133.4 km^2).

PERIOD OF RECORD.--January 1959 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,540.2 ft (774.25 m) above mean sea level (unadjusted).

REMARKS.--Records excellent. Flow completely regulated by Sullivan Lake 0.4 mi (0.6 km) upstream (see sta 12397000). No diversions.

AVERAGE DISCHARGE.--17 years, 76.7 ft^3/s (2.172 m^3/s), 55,570 acre-ft/yr (68.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 924 ft^3/s (26.2 m^3/s) May 31, 1969, gage height, 12.26 ft (3.737 m); minimum 1.6 ft^3/s (0.045 m^3/s) part of each day Apr. 9-12, 1973, gage height, 8.76 ft (2.670 m).

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 448 ft^3/s (12.7 m^3/s) Jan. 15, gage height, 11.07 ft (3.374 m); minimum, 2.5 ft^3/s (0.07 m^3/s) part or all of each day Apr. 8-14. gage height, 8.80 ft (2.682 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	238	149	4.9	69	27	25	3.1	14	86	23	66
2	136	235	145	4.9	64	27	25	3.3	15	86	23	63
3	340	229	67	5.2	61	26	25	3.3	15	86	23	61
4	336	229	5.8	5.2	60	26	26	3.6	15	86	23	61
5	336	226	5.2	4.6	59	25	26	3.8	16	84	24	60
6	330	224	4.9	4.3	52	25	27	3.8	16	84	24	57
7	325	218	4.9	4.3	56	24	15	3.8	16	81	24	55
8	320	215	4.9	4.3	50	24	2.7	4.0	17	81	24	40
9	315	213	4.9	4.3	46	23	2.9	4.3	18	81	24	23
10	310	207	4.9	4.3	44	23	2.7	4.6	18	79	24	22
11	305	204	4.9	4.3	43	23	2.5	4.6	18	79	24	22
12	300	199	4.9	4.9	40	23	2.5	4.9	19	72	24	22
13	295	196	4.9	5.5	39	22	2.7	5.2	19	41	24	22
14	290	194	5.2	250	38	22	2.9	5.5	20	33	24	22
15	288	191	5.5	430	37	21	2.9	6.1	20	33	25	22
16	285	189	5.5	405	36	21	2.7	6.4	87	33	29	22
17	282	189	5.5	338	36	21	2.7	7.1	210	32	30	22
18	280	184	5.2	287	36	21	2.7	7.5	235	31	30	22
19	277	184	5.2	246	34	22	2.7	7.8	210	29	32	22
20	275	178	5.2	213	33	22	3.1	8.2	204	24	36	22
21	272	176	5.2	184	32	21	2.9	8.6	204	24	37	22
22	270	176	5.2	171	32	22	2.9	9.4	202	24	36	22
23	267	171	5.2	154	30	24	2.9	9.9	196	24	56	22
24	265	168	5.2	136	30	24	2.9	10	196	24	76	22
25	260	166	4.3	123	30	24	2.9	11	184	24	78	22
26	255	164	5.2	111	30	24	2.9	11	168	24	78	22
27	250	161	4.6	102	29	24	2.9	12	166	23	76	22
28	245	159	4.6	93	29	24	3.1	12	125	23	76	22
29	240	154	4.9	86	28	24	3.1	13	86	23	73	22
30	238	152	4.9	79	---	24	3.1	13	87	23	72	22
31	241	---	4.6	73	---	25	---	14	---	23	69	---
TOTAL	8453	5789	502.4	3542.0	1203	728	234.3	224.8	2816	1500	1241	948
MEAN	273	193	16.2	114	41.5	23.5	7.81	7.25	93.9	48.4	40.0	31.6
MAX	340	238	149	430	69	27	27	14	235	86	78	66
MIN	25	152	4.3	4.3	28	21	2.5	3.1	14	23	23	22
AC-FT	16770	11480	997	7030	2390	1440	465	446	5590	2980	2460	1880

CAL YR 1975 TOTAL 28805.0 MEAN 78.9 MAX 361 MIN 4.1 AC-FT 57130
WTR YR 1976 TOTAL 27181.5 MEAN 74.3 MAX 430 MIN 2.5 AC-FT 53910

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 48°59'56", long 117°21'09", in SW¼NE¼ sec.3, T.40 N., R.43 E., Pend Oreille County, Hydrologic Unit 17010216, on left bank 0.1 mi (0.2 km) upstream from international boundary, 0.9 mi (1.4 km) downstream from Boundary Dam, 6.0 mi (9.7 km) downstream from Slate Creek, 9.7 mi (15.6 km) north of Metaline Falls and at mile 16.1 (25.9 km).

DRAINAGE AREA.--25,200 mi^2 (65,300 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1908 to September 1910 (gage heights only), October 1912 to current year. Prior to October 1928, published as Clark Fork at Metaline Falls, October 1928 to September 1937 as Clark Fork below Z Canyon, near Metaline Falls, and October 1938 to September 1964 as "below Z Canyon, near Metaline Falls." Concurrent records published for present site December 1962 to September 1964.

REVISED RECORDS.--WSP 442: 1913. WSP 1716: 1919.

GAGE.--Water-stage recorder. Datum of gage is 1,700 ft (518.21 m) above mean sea level (city of Seattle Boundary Dam datum). Prior to Dec. 20, 1928, nonrecording gage at Metaline Falls at datum approximately 1,983.4 ft (604.54 m) above mean sea level. Dec. 20, 1928, to Sept. 30, 1964, water-stage recorder at site 1.3 mi (2.1 km) upstream at datum 1,721.18 ft (524.616 m) above mean sea level (levels by Corps of Engineers).

REMARKS.--Records excellent. Flow regulated by Boundary Reservoir 0.9 mi (1.4 km) upstream beginning April 1967 and by Box Canyon Reservoir beginning June 1955, Pend Oreille Lake beginning June 1952 (see sta 12392500), Flathead Lake beginning April 1938 (see sta 12371500), Hungry Horse Reservoir beginning September 1951 (see sta 12362000) and by several smaller reservoirs and powerplants. In 1946 there were diversions for irrigation of 340,000 acres (1,380 km^2) above the station and there probably has not been any appreciable change since that time.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--64 years, 27,530 ft^3/s (779.6 m^3/s), 19,950,000 acre-ft/yr (24,600 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 171,300 ft^3/s (4,850 m^3/s) June 13, 1948, gage height, 60.25 ft (18.364 m), site and datum then in use; minimum daily, 200 ft^3/s (5.66 m^3/s) Aug. 12, 1967, result of regulation; minimum observed, 109 ft^3/s (3.09 m^3/s) Apr. 23, 1967, result of regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1894 reached a stage of 69.0 ft (21.03 m), from floodmarks, at site and datum 1.3 mi (2.1 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 103,000 ft^3/s (2,920 m^3/s) May 28, gage height, 38.46 ft (11.723 m); minimum, 5,440 ft^3/s (154 m^3/s) Aug. 11, gage height, 18.02 ft (5.492 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17000	32600	21800	27000	21900	22200	28600	45200	95600	53500	17000	15800
2	19200	32800	25100	27300	25900	24700	28000	46000	84100	53800	21000	16400
3	24000	32400	25200	28200	23200	26300	26900	48000	81000	53600	18600	17200
4	23400	31900	27000	25100	27900	28600	25200	50700	77900	52200	20200	18900
5	23100	27200	29200	23000	27500	28400	24900	50200	69000	48800	19700	15500
6	25400	24000	27900	19300	24400	24400	26100	49200	65300	44400	21400	15500
7	25300	22500	31300	20500	22800	24000	26400	51300	60800	41900	18200	13500
8	25700	23300	32900	17800	23400	22600	26400	53800	59300	39700	14900	14000
9	28800	27600	32900	18200	26100	21000	26800	56300	58900	38600	17400	12600
10	27000	29600	31800	20800	22600	20500	35900	64500	59000	39000	17600	10300
11	26300	28900	30200	20000	20300	20100	40100	70700	59100	39900	18000	10000
12	26000	29500	30600	21100	19500	21900	41800	73500	58900	45700	19500	9440
13	25200	29200	31000	23000	21400	15500	46300	78400	58700	48800	17900	12200
14	27500	30700	31000	26100	20300	13400	50400	84100	58800	45800	18000	11000
15	25900	34100	31600	24100	24900	20700	50600	90200	55800	40800	14500	11400
16	25400	33900	31300	26900	23100	24700	50200	92100	54700	38900	18800	11000
17	26700	30600	30900	26400	26000	26400	50300	93900	52700	35900	21900	11000
18	28300	30100	28400	24200	29300	26300	49500	95000	54100	33700	21200	12200
19	31900	28500	27500	21500	29300	24200	49900	97000	57500	32800	22000	11000
20	31200	29100	25500	20700	28900	24100	48600	99400	58300	30900	20900	13000
21	30600	26300	26200	24200	26000	23200	48100	100000	58100	28700	21100	17000
22	26200	19100	27300	24100	23800	22500	48100	101000	57300	26500	21500	20200
23	29800	14000	27400	22000	22300	21800	48500	101000	54600	26300	20800	21200
24	36400	12800	26300	14100	23600	23700	47900	99900	57400	24900	20500	20500
25	34500	17200	21300	14800	22900	27600	47700	99500	57600	25000	20700	23000
26	33800	18200	17500	14300	24300	28400	46000	98800	54900	25500	23700	22400
27	32500	22200	22200	15600	26500	28800	45600	98900	52700	26700	23600	20500
28	30900	21500	20800	19600	25500	28800	45800	98900	49300	27300	18900	21400
29	29200	20900	24200	26000	28700	28800	44500	97800	47700	23000	15700	21700
30	31400	21400	26300	25900	---	30700	44300	97900	49100	20500	19200	22500
31	32800	---	26000	22200	---	30000	---	97000	---	20500	18500	---
TOTAL	861400	782100	848600	684000	712200	754300	1219400	2480200	1818200	1133600	602900	472340
MEAN	27790	26070	27370	22060	24560	24330	40650	80010	60610	36570	19450	15740
MAX	36400	34100	32900	28200	29300	30700	50600	101000	95600	53800	23700	2300
MIN	17000	12800	17500	14100	19500	13400	24900	45200	47700	20500	14500	944
AC-FT	1709000	1551000	1683000	1357000	1413000	1496000	2419000	4919000	3606000	2248000	1196000	93690

CAL YR 1975 TOTAL 11410600 MEAN 31260 MAX 107000 MIN 5640 AC-FT 22630000
WTR YR 1976 TOTAL 12369240 MEAN 33800 MAX 101000 MIN 9440 AC-FT 24530000

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1974 to current year.
WATER TEMPERATURE: April 1974 to current year.

INSTRUMENTATION.--Water-quality monitor since April 1974.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument or the probes being out of water. In addition to the water-quality monitor record, samples were collected approximately once a month.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 242 micromhos July 17, 1974; minimum, 62 micromhos April 25, 1975.
WATER TEMPERATURES: Maximum, 24.5°C July 28-30, 1975; minimum, 0.0°C at times during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 188 micromhos Oct. 19; minimum, 93 micromhos June 9.
WATER TEMPERATURES: Maximum, 21.5°C July 28; minimum recorded, 0.0°C Jan. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
OCT 01...	1200	18500	173	7.3	15.8	1	<1	<1	<1	83	3	23
NOV 04...	0930	36200	161	7.4	8.8	--	6	<1	<1	85	--	24
DEC 02...	1500	28300	127	7.2	1.6	1	7	<1	6	81	4	23
JAN 05...	1220	24300	167	7.8	2.0	2	1	<1	4	85	3	24
FEB 04...	0915	29900	162	7.3	1.8	15	2	<1	<1	88	4	24
MAR 03...	1330	27800	171	7.2	1.9	1	<1	1	<1	88	9	25
APR 07...	1100	26200	162	7.6	6.0	2	2	<1	<1	82	0	23
29...	0830	46100	149	7.1	7.7	4	B10	40	B3	78	3	21
MAY 27...	1030	99500	134	8.0	10.6	9	17	1	2	68	4	19
JUN 30...	1245	48600	133	7.5	14.8	2	<1	1	1	72	8	19
AUG 04...	1300	22600	146	8.4	20.9	1	1	<1	1	77	5	22
SEP 01...	1115	20500	148	8.4	18.9	1	<1	<1	<1	79	8	22

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT 01...	6.2	2.7	.8	97	80	7.8	8.7	.8	.1	5.6	98	96
NOV 04...	6.1	2.8	.9	--	--	--	10	.2	.0	5.9	--	--
DEC 02...	5.8	2.6	.9	94	77	9.5	7.7	3.8	.1	6.1	79	96
JAN 05...	6.1	2.8	1.0	100	82	2.5	11	1.1	.2	5.8	113	101
FEB 04...	6.7	2.6	1.0	102	84	8.2	12	.1	.1	5.7	96	102
MAR 03...	6.3	2.8	.9	97	80	9.8	11	1.5	.1	5.8	98	101
APR 07...	5.9	2.5	.9	101	83	4.1	10	1.1	.1	6.0	97	99
29...	6.1	3.1	.9	91	75	12	11	1.2	.1	6.9	106	95
MAY 27...	4.9	2.0	.8	78	64	1.2	7.8	.8	.1	6.9	83	81
JUN 30...	6.0	1.0	.8	78	64	3.9	9.5	2.6	.2	6.9	85	85
AUG 04...	5.3	2.5	.7	88	72	.6	8.9	1.0	.1	5.9	91	90
SEP 01...	5.8	2.3	.8	86	71	.5	7.9	3.4	.1	5.4	88	90

B Results based upon colony counts outside the ideal range.

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	SUS-PENDED SOLIDS (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT											
01...	--	.01	.00	.01	.03	.17	.01	.00	2	100	99
NOV											
04...	--	.01	.00	.01	.05	.15	.01	.00	6	586	96
DEC											
02...	--	.02	.00	.02	.05	.20	.02	.00	5	382	99
JAN											
05...	--	.05	.00	.05	.08	.16	.01	.00	2	131	97
FEB											
04...	--	.02	.00	.02	.03	.14	.01	.00	2	161	95
MAR											
03...	--	.02	.00	.02	.06	.27	.01	.00	13	976	100
APR											
07...	--	.01	.00	.01	.04	.18	.01	.00	5	354	94
28...	--	.02	.01	.03	.08	.28	.02	.00	6	747	94
MAY											
27...	--	.03	.00	.03	.06	.25	.03	.01	18	4840	98
JUN											
30...	--	.00	.00	.00	.02	.23	.02	.00	9	1180	97
AUG											
04...	--	.01	.00	.01	.04	.18	.01	.00	2	122	77
SEP											
01...	1	.01	.00	.01	.03	.14	.01	.00	3	166	92

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT												
01...	1200	1	1	10	1	10	10	<50	1	50	10	70
JAN												
05...	1220	0	0	10	1	0	0	<50	0	20	7	60
APR												
07...	1100	1	1	<10	0	0	0	<50	0	10	4	180
JUN												
30...	1245	18	1	6	5	<10	<10	0	0	80	10	180

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT												
01...	10	100	11	10	10	.1	.0	0	0	10	10	1.6
JAN												
05...	0	<100	6	10	0	.0	.0	0	0	60	10	2.1
APR												
07...	20	<100	3	10	0	.0	.0	0	0	0	0	1.7
JUN												
30...	10	88	19	10	0	<.5	<.5	0	0	40	20	16

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1.000 CELLS/ML

OCT. 1, 1975 1200 HOURS		_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..TETRASPORALES				
		...COCCOMYXACEAE				
	L	....ELAKATOTHRIX			0	
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		110	11	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		18	2	
		...CYMBELLACEAE				
		....CYMBELLA		18	2	
	L	....EPITHEMIA			0	
		...FRAGILARIACEAE				
	D	....ASTERIONELLA		420		
		...TABELLARIACEAE				
	L	....TABELLARIA			0	
			TOTALS	570	56	1.098=DIVERSITY
		.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
		..CHRYSOMONADALES				
		...OCHROMONADACEAE				
		....DINOBRYON		18	2	
			TOTALS	18	2	0.000=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE			
		.MYXOPHYCEAE				
		..OSCILLATORIALES	FILAMENTOUS			
		...NOSTOCACEAE				
	D	....ANABAENA		220	21	
	D	....APHANIZOMENON		220	21	
			TOTALS	440	42	1.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.985
CLASS 1.100
ORDER 1.492
FAMILY 1.708
GENERA 2.136

5.000 CELLS/ML

NOV. 4, 1975 0930 HOURS		_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...OOCYSTACEAE				
		....ANKISTRODESMUS		45	1	
			TOTALS	45	1	0.000=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
	L	....CYCLOTELLA			0	
	D	....MELOSIRA		850	17	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....RHOICOSPHENIA		45	1	
		...CYMBELLACEAE				
	L	....CYMBELLA			0	
		...FRAGILARIACEAE				
		....ASTERIONELLA		45	1	
		....FRAGILARIA		360	7	
		...NAVICULACEAE	NAVICULOID			
		....NAVICULA		45	1	
			TOTALS	1.300	27	1.417=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE			
		.MYXOPHYCEAE				
		..OSCILLATORIALES	FILAMENTOUS			
		...OSCILLATORIACEAE				
		....LYNGBYA		450	9	
	D	....PHORMIDIUM		3.200	64	
			TOTALS	3.700	73	0.535=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.904
CLASS 0.904
ORDER 1.156
FAMILY 1.240
GENERA 1.668

SAMPLING METHOD - EDI

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                         IDENTIFICATION OF PHYTOPLANKTON

                                  240 CELLS/ML

DEC. 2, 1975   _ORGANISM__NAME______________   _COMMON__NAME______   CELLS/ML     PER_CENT
 1500 HOURS
                 CHLOROPHYTA                    GREEN ALGAE
                 .CHLOROPHYCEAE
                 ..CHLOROCOCCALES
                 ...OOCYSTACEAE
                 ....ANKISTRODESMUS                                       24          10
                 ...SCENEDESMACEAE
               L ....SCENEDESMUS                                       -----          _0
                                                           TOTALS         24          10      0.000=DIVERSITY
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE             DIATOMS
                 ..CENTRALES                    CENTRIC
                 ...COSCINODISCACEAE
               D ....CYCLOTELLA                                           86          35
               D ....MELOSIRA                                             73          30
                 ..PENNALES                     PENNATE
                 ...ACHNANTHACEAE
                 ....ACHNANTHES                                           12           5
                 ...FRAGILARIACEAE
                 ....ASTERIONELLA                                         12           5
               L ....SYNEDRA                                                           0
                 ...NAVICULACEAE                NAVICULOID
               L ....FRUSTULIA                                                         0
                 ....NAVICULA                                             24          10
                 ...NITZSCHIACEAE
                 ....NITZSCHIA                                         ---12          _5
                                                           TOTALS        220          90      2.105=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                    PHYL/DIV 0.469
                                       CLASS 0.469
                                       ORDER 1.236
                                      FAMILY 1.717
                                      GENERA 2.354
                SAMPLING METHOD - EDI
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                                  700 CELLS/ML

JAN. 5, 1976   _ORGANISM__NAME______________   _COMMON__NAME______   CELLS/ML     PER_CENT
 1220 HOURS
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE             DIATOMS
                 ..CENTRALES                    CENTRIC
                 ...COSCINODISCACEAE
               D ....CYCLOTELLA                                          310          45
                 ....MELOSIRA                                             74          11
                 ..PENNALES                     PENNATE
                 ...CYMBELLACEAE
               L ....CYMBELLA                                                          0
               L ....RHOPALODIA                                                        0
                 ...DIATOMACEAE
               L ....DIATOMA                                                           0
                 ...FRAGILARIACEAE
                 ....ASTERIONELLA                                         55           8
               D ....FRAGILARIA                                          240          34
               L ....SYNEDRA                                                           0
                 ...NAVICULACEAE                NAVICULOID
               L ....CALONEIS                                                          0
                 ....NAVICULA                                             18           3
                 ...NITZSCHIACEAE
               L ....NITZSCHIA                                         -----          _0
                                                           TOTALS        700         101      1.818=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                       ORDER 0.992
                                      FAMILY 1.136
                                      GENERA 1.818
                SAMPLING METHOD - EDI
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12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                              IDENTIFICATION OF PHYTOPLANKTON

                                       890 CELLS/ML

FEB. 4, 1976    _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML      PER_CENT
 0915 HOURS
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE             DIATOMS
                 ..PENNALES                     PENNATE
                 ...FRAGILARIACEAE
                 ....H.ARCUS                                            21            2
                 ..CENTRALES                    CENTRIC
                 ...COSCINODISCACEAE
               D ....CYCLOTELLA                                        400           45
                 ..PENNALES                     PENNATE
                 ...CYMBELLACEAE
               L ....CYMBELLA                                                         0
                 ...DIATOMACEAE
               L ....DIATOMA                                                          0
                 ...FRAGILARIACEAE
                 ....ASTERIONELLA                                      130           14
               D ....FRAGILARIA                                        320           36
               L ....SYNEDRA                                                          0
                 ...NAVICULACEAE                NAVICULOID
               L ....NAVICULA                                                         0
                 ...NITZSCHIACEAE
                 ....NITZSCHIA                                      ____21           _2
                                                           TOTALS      890           99        1.706=DIVERSITY

               NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                     L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                     ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                     DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                        ORDER 1.135
                                       FAMILY 1.274
                                       GENERA 1.706
                  SAMPLING METHOD - EDI

                                      37.000 CELLS/ML

MAR. 3, 1976    _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML      PER_CENT
 1330 HOURS
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE             DIATOMS
                 ..CENTRALES                    CENTRIC
                 ...COSCINODISCACEAE
               D ....CYCLOTELLA                                     22.000           57
                 ..PENNALES                     PENNATE
                 ...DIATOMACEAE
                 ....DIATOMA                                         1.900            5
                 ...FRAGILARIACEAE
               D ....ASTERIONELLA                                    8.400           22
                 ...NAVICULACEAE                NAVICULOID
                 ....NAVICULA                                        2.800            7
                 ...NITZSCHIACEAE
                 ....NITZSCHIA                                      _2.800           _7
                                                           TOTALS   37.000           98        1.720=DIVERSITY

               NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                     ANALYSIS METHOD: SLIDE MOUNTING
                     DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                        ORDER 0.984
                                       FAMILY 1.720
                                       GENERA 1.720
                  SAMPLING METHOD - EDI
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12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

5.200 CELLS/ML

APR. 7, 1976 1100 HOURS		_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...OOCYSTACEAE				
		....ANKISTRODESMUS		70	1	
		..TETRASPORALES				
		...PALMELLACEAE				
	L	....SPHAEROCYSTIS			0	
			TOTALS	70	1	0.000=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		110	2	
		....MELOSIRA		320	6	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
	D	....ACHNANTHES		3.800	72	
		...CYMBELLACEAE				
	L	....RHOPALODIA			0	
		...DIATOMACEAE				
	L	....DIATOMA			0	
		...FRAGILARIACEAE				
		....FRAGILARIA		630	12	
		....SYNEDRA		110	2	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		35	1	
		...NAVICULACEAE	NAVICULOID			
		....NAVICULA		70	1	
	L	....STAURONEIS			0	
		...NITZSCHIACEAE				
		....NITZSCHIA		70	1	
		...SURIRELLACEAE				
		....SURIRELLA		35	1	
			TOTALS	5.200	98	1.440=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1% MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.103
CLASS 0.103
ORDER 0.505
FAMILY 1.375
GENERA 1.524

SAMPLING METHOD - EDI

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

5,400 CELLS/ML

		_ORGANISM__NAME	_COMMON__NAME		CELLS/ML	PER_CENT	
APR. 28, 1976 0830 HOURS		CHLOROPHYTA	GREEN ALGAE				
		.CHLOROPHYCEAE					
		..CHLOROCOCCALES					
		...MICRACTINIACEAE					
		....MICRACTINIUM			100	2	
		...OOCYSTACEAE					
		....ANKISTRODESMUS			100	2	
		....CHODATELLA			51	1	
				TOTALS	250	5	1.522=DIVERSITY
		CHRYSOPHYTA					
		.BACILLARIOPHYCEAE	DIATOMS				
		..PENNALES	PENNATE				
		...FRAGILARIACEAE					
		....H.ARCUS			51	1	
		..CENTRALES	CENTRIC				
		...COSCINODISCACEAE					
	D	....CYCLOTELLA			2,700	50	
		..PENNALES	PENNATE				
		...ACHNANTHACEAE					
		....ACHNANTHES			100	2	
		...CYMBELLACEAE					
		....AMPHORA			51	1	
		...FRAGILARIACEAE					
	D	....ASTERIONELLA			810	15	
		....FRAGILARIA			200	4	
	L	....SYNEDRA				0	
		...NAVICULACEAE	NAVICULOID				
		....NAVICULA			150	3	
		...NITZSCHIACEAE					
		....NITZSCHIA			250	5	
				TOTALS	4,400	81	1.762=DIVERSITY
		.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE				
		..CHRYSOMONADALES					
		...OCHROMONADACEAE					
		....DINOBRYON			51	1	
				TOTALS	51	1	0.000=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE				
		.MYXOPHYCEAE					
		..CHROOCOCCALES	COCCOID				
		...CHROOCOCCACEAE					
		....ANACYSTIS			100	2	
		..OSCILLATORIALES	FILAMENTOUS				
		...NOSTOCACEAE					
		....ANABAENA			660	12	
				TOTALS	760	14	0.567=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 0.847
CLASS 0.920
ORDER 1.825
FAMILY 2.326
GENERA 2.487

SAMPLING METHOD - EDI

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                              IDENTIFICATION OF PHYTOPLANKTON

                                     2,300 CELLS/ML

MAY 27, 1976   _ORGANISM__NAME______________   _COMMON__NAME______   CELLS/ML      PER_CENT
 1030 HOURS
               CHLOROPHYTA                     GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
             D ....ANKISTRODESMUS                                     ___370          16
                                                           TOTALS        370          16        0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE              DIATOMS
               ..PENNALES                      PENNATE
               ...FRAGILARIACEAE
               ....H.ARCUS                                                19           1
               ..CENTRALES                     CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                            350          15
             L ....MELOSIRA                                                            0
               ..PENNALES                      PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                             19           1
               ...CYMBELLACEAE
               ....CYMBELLA                                               38           2
               ....EPITHEMIA                                              19           1
               ...DIATOMACEAE
               ....DIATOMA                                                19           1
               ...FRAGILARIACEAE
             D ....ASTERIONELLA                                          810          35
               ....FRAGILARIA                                            210           9
               ....SYNEDRA                                                96           4
               ...GOMPHONEMATACEAE
               ....GOMPHONEMA                                             19           1
               ...NAVICULACEAE                 NAVICULOID
               ....NAVICULA                                               77           3
               ...NITZSCHIACEAE
               ....NITZSCHIA                                             250          11
               ...SURIRELLACEAE
               ....SURIRELLA                                          ____19          _1
                                                           TOTALS      1,900          85        2.606=DIVERSITY

               PYRRHOPHYTA                     FIRE ALGAE
               .DINOPHYCEAE                    DINOFLAGELLATES
               ..PERIDINIALES
               ...GLENODINIACEAE
               ....GLENODINIUM                                        ____19          _1
                                                           TOTALS         19           1        0.000=DIVERSITY

               NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                     L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                     ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                     DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                    PHYL/DIV 0.694
                                       CLASS 0.694
                                       ORDER 1.323
                                      FAMILY 2.321
                                      GENERA 2.869
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SAMPLING METHOD - EDI

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

2.900 CELLS/ML

JUNE 30, 1976 1245 HOURS	_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		1.300	45	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		86	3	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		1.000	36	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		86	3	
	...NITZSCHIACEAE				
	....NITZSCHIA		260	9	
	...TABELLARIACEAE				
	....TABELLARIA		86	3	
		TOTALS	2.900	99	1.821=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
ORDER 0.994
FAMILY 1.821
GENERA 1.821

SAMPLING METHOD - EDI

3.500 CELLS/ML

AUG. 4, 1976 1300 HOURS	_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....CHODATELLA		27	1	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CARTERIA		27	1	
	....CHLAMYDOMONAS		27	1	
		TOTALS	80	3	1.585=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		480	14	
	....MELOSIRA		510	14	
	...RHIZOSOLENIACEAE				
	....RHIZOSOLENIA		270	8	
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....ASTERIONELLA		27	1	
	....FRAGILARIA		53	2	
	....SYNEDRA		80	2	
	...NITZSCHIACEAE				
	....NITZSCHIA		27	1	
		TOTALS	1.400	42	2.130=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		53	2	
		TOTALS	53	2	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	....APHANIZOMENON		190	5	
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		1.800	50	
		TOTALS	2.000	55	0.452=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 1.119
CLASS 1.213
ORDER 1.460
FAMILY 2.006
GENERA 2.365

SAMPLING METHOD - EDI

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1,400 CELLS/ML

SEPT. 1, 1976 1115 HOURS		_ORGANISM__NAME_____________	_COMMON__NAME______	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...OOCYSTACEAE				
	L	....DICTYOSPHAERIUM			0	
		..TETRASPORALES				
		...COCCOMYXACEAE				
		....ELAKATOTHRIX		13	1	
		..VOLVOCALES				
		...VOLVOCACEAE				
		....EUDORINA		47	3	
			TOTALS	60	4	0.764=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		17	1	
	L	....MELOSIRA			0	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
	L	....COCCONEIS			0	
		...CYMBELLACEAE				
	L	....CYMBELLA			0	
	L	....RHOPALODIA			0	
		...DIATOMACEAE				
	L	....DIATOMA			0	
		...FRAGILARIACEAE				
		....ASTERIONELLA		10	1	
	L	....FRAGILARIA			0	
		....SYNEDRA		10	1	
		...NAVICULACEAE	NAVICULOID			
	L	....CALONEIS			0	
	L	....NAVICULA			0	
	L	....NEIDIUM			0	
		...NITZSCHIACEAE				
		....NITZSCHIA		10	1	
			TOTALS	77	4	3.138=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE			
		.MYXOPHYCEAE				
		..OSCILLATORIALES	FILAMENTOUS			
		...NOSTOCACEAE				
		....ANABAENA		140	10	
		...OSCILLATORIACEAE				
	D	....OSCILLATORIA		1,100	80	
			TOTALS	1,300	90	0.512=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.560
CLASS	0.560
ORDER	0.642
FAMILY	1.169
GENERA	1.227

SAMPLING METHOD - EDI

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Biomass (g/m^2) Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct. 1	28	10	8.1	6.0	1.0	370	Polyethylene strip
Jan. 5	34	3.9	0.7	2.0	0.0	1,700	

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	174	170	173	181	174	178	129	128	128	160	158	159
2	---	---	---	176	173	174	127	125	126	163	161	162
3	180	172	175	172	167	170	126	123	125	165	164	165
4	187	180	183	163	159	160	127	124	125	167	166	166
5	187	182	185	170	158	164	129	128	129	168	167	167
6	183	179	180	173	170	172	131	130	131	168	167	167
7	179	173	176	173	170	172	132	132	132	167	166	167
8	178	171	174	173	171	172	132	131	132	---	---	---
9	180	176	177	172	170	171	132	131	132	---	---	---
10	177	175	176	170	169	169	133	133	133	115	107	112
11	176	171	174	169	167	168	135	134	135	122	113	117
12	177	170	174	167	166	166	137	136	137	123	117	120
13	178	172	175	167	165	166	140	138	138	137	123	131
14	176	175	175	165	164	164	141	139	139	139	128	134
15	182	174	177	164	160	162	140	140	140	141	133	136
16	184	179	181	162	161	161	142	142	142	137	132	134
17	181	175	178	160	159	160	144	144	144	136	130	132
18	183	176	179	159	158	158	145	145	145	139	131	134
19	188	185	186	157	156	157	146	145	146	144	137	140
20	185	182	183	155	154	154	146	146	146	147	142	144
21	183	179	180	154	152	153	147	146	147	151	147	149
22	182	177	180	152	150	151	149	147	148	151	147	148
23	185	179	182	150	149	149	151	150	151	150	146	147
24	186	180	183	148	146	146	153	152	152	153	149	151
25	180	178	179	147	146	146	153	153	153	154	148	151
26	179	177	178	145	143	143	155	153	154	154	153	153
27	178	176	178	142	140	141	155	154	155	154	150	152
28	179	178	179	138	135	137	157	156	157	155	151	153
29	180	176	179	133	131	132	158	156	157	153	150	152
30	173	169	170	130	129	130	158	155	157	151	149	150
31	181	166	175	---	---	---	157	156	157	152	149	150
MONTH	188	166	178	181	129	158	158	123	142	168	107	146

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	156	152	154	173	171	171	169	168	169	140	135	139
2	159	156	157	172	170	171	169	168	169	143	141	142
3	161	159	160	172	172	172	169	167	168	143	142	143
4	162	160	161	173	171	172	168	166	166	144	142	143
5	164	162	163	173	172	173	167	165	165	144	142	143
6	164	163	163	174	173	174	165	163	164	143	140	142
7	165	163	164	174	173	174	163	160	163	142	140	141
8	166	164	165	175	173	174	162	159	160	146	129	136
9	167	165	166	175	173	174	160	159	160	132	127	130
10	168	166	167	175	173	174	159	157	158	130	127	129
11	168	167	168	174	173	174	158	157	157	137	131	134
12	167	166	167	174	173	173	157	154	156	138	134	136
13	168	166	167	175	173	174	157	156	157	136	132	135
14	167	166	167	175	173	175	160	157	158	141	136	140
15	167	166	167	175	173	174	159	158	159	141	134	137
16	167	165	166	174	173	174	159	158	159	137	133	135
17	167	166	167	173	172	172	162	158	160	140	136	139
18	168	167	168	172	171	172	158	152	154	139	137	138
19	168	166	167	174	171	172	157	153	155	141	137	139
20	168	166	167	174	173	174	157	157	157	143	134	140
21	169	168	169	175	173	173	157	157	157	134	127	130
22	171	169	170	173	173	173	157	156	157	130	128	129
23	172	170	171	174	172	173	157	156	157	131	127	128
24	172	170	171	172	170	172	155	151	153	131	127	129
25	172	171	171	170	169	169	154	151	153	130	129	130
26	173	171	172	170	169	169	154	151	153	133	131	132
27	173	172	173	170	169	169	155	150	152	133	130	132
28	174	173	174	170	169	169	151	142	146	131	126	129
29	173	171	172	171	169	169	143	142	142	128	122	124
30	---	---	---	169	168	168	145	143	144	127	121	123
31	---	---	---	168	167	168	---	---	---	127	124	126
MONTH	174	152	167	175	167	172	169	142	158	146	121	135

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	124	119	121	125	122	124	151	149	150			
2	121	119	120	123	119	121	149	146	147			
3	122	114	118	123	120	121	146	142	144			
4	117	113	115	123	120	122	151	145	148			
5	116	109	112	123	121	122	148	143	146			
6	112	100	106	122	118	120	155	144	149			
7	100	96	98	119	116	117	158	151	155			
8	98	95	96	123	114	118	160	156	158			
9	104	93	97	131	123	127	159	153	156			
10	106	102	103	136	132	134	158	149	153			
11	110	103	106	135	133	134	159	153	156			
12	119	110	114	133	131	132	159	154	156			
13	---	---	---	137	130	134	155	148	152			
14	---	---	---	138	136	137	155	146	150			
15	---	---	---	140	138	139	155	151	153			
16	---	---	---	141	139	140	157	151	154			
17	---	---	---	142	140	141	153	148	150			
18	---	---	---	147	142	144	151	142	146			
19	---	---	---	150	146	148	151	144	148			
20	---	---	---	149	148	148	146	142	143			
21	---	---	---	154	147	150	144	136	140			
22	---	---	---	158	152	155	---	---	---			
23	---	---	---	154	152	153	---	---	---			
24	---	---	---	157	153	154	---	---	---			
25	---	---	---	158	154	156	---	---	---			
26	---	---	---	160	156	157	---	---	---			
27	---	---	---	160	159	159	---	---	---			
28	---	---	---	159	157	158	---	---	---			
29	---	---	---	161	154	158	---	---	---			
30	132	123	126	155	151	153	---	---	---			
31	---	---	---	151	147	149	---	---	---			
MONTH	---	---	---	161	114	140	---	---	---			
YEAR	188	93	153									

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.0	15.5	15.5	9.0	9.0	9.0	2.0	1.5	2.0	2.0	2.0	2.0
2	15.5	15.5	15.5	9.0	8.5	9.0	1.5	1.5	1.5	2.5	2.0	2.5
3	15.5	15.5	15.5	9.0	8.5	9.0	1.5	1.5	1.5	2.5	2.0	2.5
4	15.5	15.5	15.5	9.0	9.0	9.0	1.5	1.5	1.5	2.0	2.0	2.0
5	15.5	15.5	15.5	9.0	9.0	9.0	1.5	1.0	1.5	2.0	2.0	2.0
6	15.5	15.0	15.5	9.5	9.0	9.0	2.0	1.5	1.5	2.0	1.5	1.5
7	15.0	15.0	15.0	9.5	9.5	9.5	2.5	2.0	2.0	1.5	0.5	1.5
8	15.0	14.5	14.5	9.0	9.0	9.0	3.0	2.5	2.5	---	---	---
9	14.5	14.0	14.5	9.0	8.0	8.5	3.0	3.0	3.0	---	---	---
10	14.0	14.0	14.0	8.0	7.5	8.0	3.5	3.0	3.5	0.5	0.0	0.0
11	14.0	13.5	13.5	7.5	7.5	7.5	3.5	3.0	3.5	0.5	0.5	0.5
12	13.5	13.5	13.5	7.5	7.0	7.0	3.5	3.5	3.5	0.5	0.5	0.5
13	13.5	13.0	13.0	7.0	6.5	7.0	3.5	3.0	3.5	1.0	0.5	0.5
14	13.0	13.0	13.0	6.5	6.5	6.5	3.0	3.0	3.0	1.0	0.5	1.0
15	13.0	12.5	13.0	6.5	6.5	6.5	3.0	2.5	3.0	1.0	1.0	1.0
16	13.0	12.5	12.5	6.5	6.0	6.0	2.5	2.0	2.5	1.0	1.0	1.0
17	12.5	12.0	12.5	6.0	6.0	6.0	2.0	2.0	2.0	1.5	1.0	1.0
18	12.5	12.0	12.0	6.5	6.0	6.0	2.0	2.0	2.0	1.5	1.0	1.5
19	12.5	12.5	12.5	6.0	5.5	6.0	2.0	1.5	2.0	2.0	1.5	2.0
20	12.0	12.0	12.0	5.5	5.5	5.5	2.0	1.5	1.5	2.0	2.0	2.0
21	12.0	11.5	12.0	5.5	5.0	5.5	2.0	1.5	1.5	2.0	2.0	2.0
22	11.5	11.5	11.5	5.5	5.0	5.0	2.0	1.5	1.5	2.0	1.5	1.5
23	11.5	11.0	11.0	5.0	4.5	5.0	2.0	1.5	2.0	2.0	1.5	1.5
24	11.0	10.5	11.0	5.0	4.5	5.0	2.0	1.5	1.5	1.5	1.5	1.5
25	10.5	10.0	10.5	4.5	4.5	4.5	1.5	1.5	1.5	1.5	1.5	1.5
26	10.0	9.5	10.0	4.5	4.0	4.5	1.5	1.5	1.5	1.5	1.5	1.5
27	9.5	9.5	9.5	4.0	3.5	3.5	1.5	1.0	1.5	1.5	1.0	1.5
28	9.5	9.0	9.0	3.5	2.5	3.0	1.5	1.0	1.0	1.5	1.0	1.5
29	9.5	9.0	9.0	2.5	2.0	2.5	1.5	1.5	1.5	1.5	1.0	1.0
30	8.5	8.5	8.5	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.0	1.0
31	9.0	8.5	9.0	---	---	---	2.0	1.5	2.0	1.5	1.5	1.5
MONTH	16.0	8.5	12.5	9.5	2.0	6.5	3.5	1.0	2.0	2.5	0.0	1.5

12398600 PEND OREILLE RIVER AT INTERNATIONAL BOUNDARY, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	2.0	1.5	1.5	2.0	2.0	2.0	4.5	4.0	4.0	7.5	6.5	7.0
2	2.0	2.0	2.0	2.0	1.5	1.5	4.5	4.5	4.5	8.0	7.5	7.5
3	2.0	1.5	2.0	2.0	2.0	2.0	4.5	4.5	4.5	8.0	7.5	7.5
4	2.0	1.5	1.5	2.0	1.5	1.5	5.0	4.5	4.5	8.0	7.5	7.5
5	1.5	1.0	1.5	1.5	1.5	1.5	5.0	5.0	5.0	8.0	7.5	7.5
6	1.5	0.5	1.0	1.5	1.0	1.5	5.5	5.0	5.5	8.0	7.0	7.5
7	1.0	0.5	0.5	1.5	1.0	1.0	6.0	5.5	6.0	7.5	7.0	7.5
8	0.5	0.5	0.5	1.5	1.0	1.0	6.5	6.0	6.0	9.5	7.0	8.5
9	0.5	0.5	0.5	1.5	1.0	1.0	6.5	6.0	6.5	10.5	9.5	10.0
10	0.5	0.5	0.5	1.5	1.0	1.5	7.0	6.5	7.0	11.0	10.5	11.0
11	0.5	0.5	0.5	1.5	1.5	1.5	7.5	7.0	7.5	11.0	10.5	11.0
12	0.5	0.5	0.5	2.0	1.5	2.0	7.5	7.5	7.5	10.5	10.5	10.5
13	0.5	0.5	0.5	2.5	2.0	2.0	7.5	7.5	7.5	10.5	10.0	10.5
14	1.0	0.5	0.5	2.5	2.0	2.5	8.0	7.0	7.5	10.0	9.0	9.5
15	1.0	0.5	1.0	3.0	2.0	2.5	7.0	6.5	7.0	10.5	9.5	10.0
16	1.5	1.0	1.5	3.5	3.0	3.0	6.5	6.0	6.0	11.0	10.5	10.5
17	2.0	1.5	2.0	3.5	3.5	3.5	6.0	5.5	5.5	11.0	10.5	11.0
18	2.0	2.0	2.0	4.0	3.5	4.0	6.5	5.5	6.0	11.5	11.0	11.0
19	2.5	2.0	2.5	4.0	3.5	4.0	6.0	6.0	6.0	11.0	10.5	11.0
20	2.5	2.0	2.0	4.0	3.5	4.0	6.0	6.0	6.0	10.5	10.0	10.0
21	2.5	2.0	2.5	4.0	4.0	4.0	6.5	6.0	6.0	11.0	10.5	11.0
22	2.5	2.0	2.5	4.0	4.0	4.0	6.5	6.0	6.5	11.0	10.5	11.0
23	2.5	2.5	2.5	4.5	4.0	4.0	7.0	6.5	6.5	11.5	10.5	11.0
24	2.5	2.5	2.5	4.0	4.0	4.0	7.0	6.5	7.0	11.5	11.0	11.5
25	2.5	2.0	2.5	4.5	4.0	4.0	7.0	7.0	7.0	11.0	11.0	11.0
26	2.5	2.5	2.5	4.0	4.0	4.0	7.0	7.0	7.0	11.0	10.5	11.0
27	3.0	2.5	3.0	4.0	4.0	4.0	7.5	7.0	7.5	10.5	10.5	10.5
28	3.0	2.5	3.0	4.0	4.0	4.0	8.0	7.5	7.5	11.0	10.5	10.5
29	2.5	2.5	2.5	4.0	4.0	4.0	7.5	7.0	7.5	12.0	11.0	11.5
30	---	---	---	4.0	4.0	4.0	7.5	6.5	7.0	12.0	10.5	11.5
31	---	---	---	4.5	4.0	4.0	---	---	---	10.5	10.0	10.0
MONTH	3.0	0.5	1.5	4.5	1.0	3.0	8.0	4.0	6.5	12.0	6.5	10.0

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.5	10.0	10.5	15.0	14.5	15.0	20.5	20.5	20.5			
2	10.5	10.0	10.5	15.0	14.5	15.0	21.0	20.5	20.5			
3	10.5	10.0	10.5	15.0	15.0	15.0	20.5	20.5	20.5			
4	10.5	10.5	10.5	15.0	14.0	14.5	21.0	20.5	[illegible]			
5	10.5	10.0	10.5	14.0	14.0	14.0	20.5	20.5	20.5			
6	11.0	10.5	11.0	15.0	14.0	14.5	20.5	20.0	20.5			
7	11.0	11.0	11.0	15.5	15.0	15.5	20.5	20.5	20.5			
8	11.5	11.0	11.5	15.5	15.5	15.5	21.0	21.0	21.0			
9	12.5	11.5	12.0	16.0	15.5	16.0	21.0	20.5	21.0			
10	13.0	12.5	12.5	16.5	16.0	16.0	21.0	20.5	21.0			
11	13.0	13.0	13.0	16.5	16.5	16.5	21.0	20.5	20.5			
12	13.0	12.0	12.5	17.0	16.5	16.5	21.0	20.5	20.5			
13	---	---	---	16.5	16.5	16.5	20.5	20.5	20.5			
14	---	---	---	17.0	16.5	17.0	20.5	20.0	20.5			
15	---	---	---	18.0	17.5	17.5	20.0	20.0	20.0			
16	---	---	---	18.5	18.0	18.0	20.0	20.0	20.0			
17	---	---	---	18.5	18.0	18.5	20.5	19.5	19.5			
18	---	---	---	19.0	18.5	18.5	19.5	18.5	19.0			
19	---	---	---	19.5	19.0	19.5	18.5	18.0	18.5			
20	---	---	---	20.0	19.5	19.5	18.0	17.5	18.0			
21	---	---	---	20.0	19.5	19.5	18.0	17.5	18.0			
22	---	---	---	20.0	19.5	19.0	---	---	---			
23	---	---	---	20.0	19.5	20.0	---	---	---			
24	---	---	---	20.0	20.0	20.0	---	---	---			
25	---	---	---	20.5	20.0	20.0	---	---	---			
26	---	---	---	21.0	20.0	20.5	---	---	---			
27	---	---	---	21.0	20.5	21.0	---	---	---			
28	---	---	---	21.5	21.0	21.0	---	---	---			
29	---	---	---	21.0	21.0	21.0	---	---	---			
30	15.0	14.5	14.5	21.0	20.5	20.5	---	---	---			
31	---	---	---	20.5	20.5	20.5	---	---	---			
MONTH	---	---	---	21.5	14.0	18.0	---	---	---			
YEAR	21.5	0.0	8.0									

12398900 SALMO RIVER NEAR SALMO, BRITISH COLUMBIA

LOCATION.--Lat 49°04'07", long 117°16'37", on Salmo-Nelway highway, 500 ft (152 m) downstream from South Fork Salmo River and 10 mi (16.1 km) south of Salmo, and at mile 7.3 (11.7 km).

DRAINAGE AREA.--476 mi^2 (1,233 km^2).

PERIOD OF RECORD.--October 1960 to current year in reports of Geological Survey. March 1949 to September 1960 in reports of Department of Northern Affairs and National Resources, Canada.

GAGE.--Water-stage recorder.

COOPERATION.--Records furnished by Department of the Environment, Canada.

AVERAGE DISCHARGE.--27 years, 1,149 ft^3/s (32.54 m^3/s), 832,500 acre-ft/yr (1,030 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft^3/s (462 m^3/s) June 2, 1968; minimum, 50 ft^3/s (1.42 $m^3/$ Dec. 26, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,370 ft^3/s (265 m^3/s) May 11, gage height, 6.94 ft (2.115 m); minimum daily, 236 ft^3/s (6.68 m^3/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237	561	687	549	402	290	487	2640	2940	3040	616	889
2	236	554	743	565	397	260	482	3340	2690	2400	625	826
3	240	751	1430	567	391	302	502	3740	2450	2060	656	788
4	279	969	2230	560	313	254	572	3980	2310	2070	601	760
5	269	1090	1890	544	312	289	739	4150	2230	2110	639	718
6	358	1120	1610	521	318	310	1040	4130	2180	2120	730	842
7	336	1040	1470	508	326	305	1370	5010	3010	2220	958	761
8	316	966	1380	498	354	295	1830	6360	4110	2190	782	691
9	292	908	1530	485	380	291	2390	7410	5290	2020	754	654
10	298	841	1510	485	388	296	2280	8160	5200	1700	703	610
11	332	780	1370	486	376	301	2620	8380	4570	1520	637	574
12	314	766	1260	467	374	287	2990	7060	4130	1790	604	576
13	294	724	1210	420	366	287	2800	6420	3440	1740	596	541
14	284	760	1070	447	364	283	2580	7220	3020	1460	637	509
15	314	1530	1120	472	357	280	2400	5850	3380	1330	727	472
16	318	1540	957	463	364	287	2060	5600	4880	1280	1100	452
17	376	1320	1020	500	355	295	1810	6010	4760	1220	1120	439
18	456	1140	1010	506	350	328	1690	4960	4450	1150	939	418
19	462	1040	939	467	339	361	1560	4560	4470	1050	862	399
20	478	995	881	430	329	345	1510	5180	4220	986	1310	384
21	420	917	823	408	327	332	1450	4280	3690	916	1080	371
22	409	932	797	461	322	350	1390	4050	3770	825	951	361
23	372	873	791	462	321	395	1350	4570	3470	765	893	374
24	358	846	759	400	325	396	1380	5260	3060	737	852	382
25	375	786	729	413	333	415	1520	5060	2730	701	1100	364
26	389	788	769	415	326	412	1480	3990	2290	662	1410	347
27	391	708	748	417	320	401	1470	3860	2160	618	1240	334
28	393	607	686	424	318	392	1620	4980	2270	579	1160	323
29	418	487	669	430	311	374	1720	3890	2960	619	1070	310
30	715	548	757	423	---	379	2050	3470	3410	738	1010	301
31	694	---	674	408	---	424	---	3240	---	692	949	---
TOTAL	11423	26887	33519	14601	10058	10216	49142	156810	103540	43308	27311	15770
MEAN	368	896	1081	471	347	330	1638	5058	3451	1397	881	526
MAX	715	1540	2230	567	402	424	2990	8380	5290	3040	1410	889
MIN	236	487	669	400	311	254	482	2640	2160	579	596	301
AC-FT	22660	53330	66480	28960	19950	20260	97470	311000	205400	85900	54170	31280

CAL YR 1975 TOTAL 451097 MEAN 1236 MAX 8290 MIN 85 AC-FT 894800
WTR YR 1976 TOTAL 502585 MEAN 1373 MAX 8380 MIN 236 AC-FT 996900

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

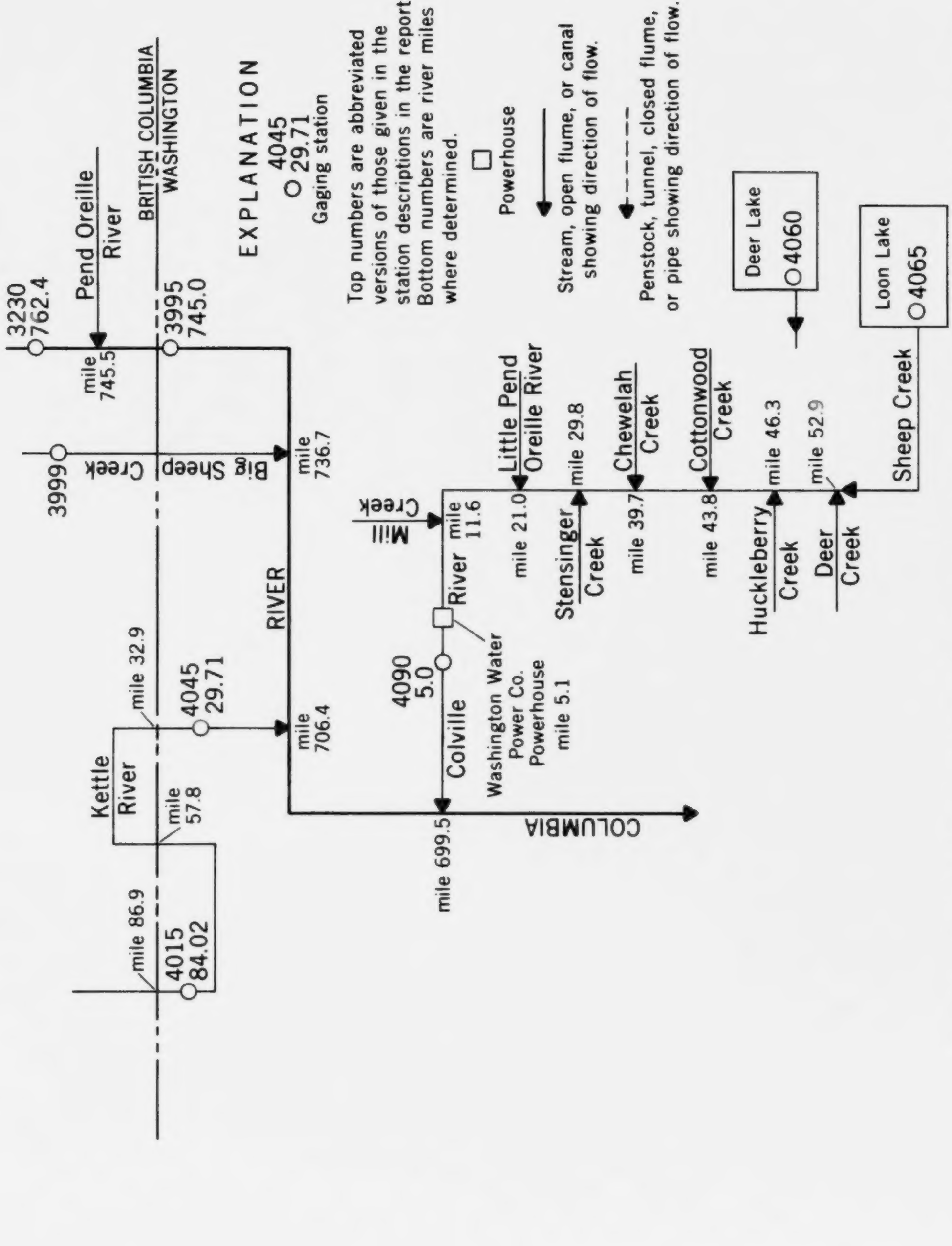
3230
762.4
Pend Oreille River
mile 745.5
BRITISH COLUMBIA
WASHINGTON
3995
745.0
3999
Big Sheep Creek
mile 736.7
mile 32.9
4045
29.71
RIVER
mile 706.4
Kettle River
mile 57.8
mile 86.9
4015
84.02
COLUMBIA
mile 699.5
Colville
4090
5.0
Washington Water Power Co. Powerhouse mile 5.1
River
Mill Creek
mile 11.6
mile 21.0
Little Pend Oreille River
Stensinger Creek
mile 29.8
mile 39.7
Chewelah Creek
mile 43.8
Cottonwood Creek
Huckleberry Creek
mile 46.3
Deer Creek
mile 52.9
Sheep Creek
Deer Lake
4060
Loon Lake
4065
EXPLANATION
4045
29.71
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.

Figure 6, Gaging stations in Columbia River basin from International Boundry to Colville River.

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'03", long 117°37'42", in NE¼SE¼ sec.4, T.40 N., R.41 E., Stevens County, Hydrologic Unit 17020001, on left bank at international boundary, 0.5 mi (0.8 km) downstream from Pend Oreille River, and at mile 745.0 (1,198.7 km).

DRAINAGE AREA.--59,700 mi^2 (154,600 km^2), approximately.

PERIOD OF RECORD.--October 1937 to current year. Prior to March 1938 monthly discharge only, published in WSP 1316.

REVISED RECORDS.--WSP 932: 1937(m), 1938(M), 1939(m).

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation 1937 datum). Prior to Apr. 27, 1939, nonrecording gage at same site and datum. Since May 31, 1942, auxiliary water-stage recorder and Jan. 1 to May 30, 1942, auxiliary nonrecording gage 2.2 mi (3.5 km) downstream from base gage at mean sea level datum.

REMARKS.--Records excellent except those for period October 1 to December 5, which are good. Flow regulated by eight major reservoirs and by numerous smaller reservoirs and powerplants. It was estimated that 346,700 acres (1,400 km^2) were under irrigation in the United States in 1946 with diversions for irrigation of an additional 35,000 acres (142 km^2) in Canada.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--39 years, 101,200 ft^3/s (2,866 m^3/s), 73,320,000 acre-ft/yr (90,400 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 550,100 ft^3/s (15,600 m^3/s) June 12, 1948, elevation, 1,338.13 ft (407.862 m); minimum, 18,000 ft^3/s (510 m^3/s) Feb. 7, 1954, elevation, 1,289.38 ft (393.003 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of 1,346 ft (410.3 m), from information by Bureau of Reclamation, discharge, 680,000 ft^3/s (19,300 m^3/s).

A discharge of about 12,900 ft^3/s (365 m^3/s) occurred Jan. 30 or 31, 1937, based on information from other gaging stations, elevation, 1,287.9 ft (392.55 m), from rating curve extended below 1,291.6 ft (393.68 m) and may have been as low sometime in January 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge,224,000 ft^3/s (6,340 m^3/s) Aug. [illegible], elevation, 1,315.25 ft (400.888 m); minimum daily, 59,000 ft^3/s (1,670 m^3/s)· Oct. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61700	94000	99100	105000	104000	87800	94200	121000	181000	147000	171000	137000
2	62600	97200	103000	105000	98900	75400	95400	116000	168000	145000	197000	137000
3	68200	101000	100000	105000	99000	77000	92900	112000	161000	143000	212000	144000
4	67300	101000	91700	97500	102000	93000	90900	109000	156000	140000	215000	143000
5	68800	96700	88300	88700	101000	92900	91500	112000	147000	138000	210000	133000
6	66400	93400	86100	83400	99400	87200	92700	110000	142000	131000	202000	166000
7	73600	91800	88100	83700	100000	84600	85500	118000	138000	130000	188000	197000
8	76200	92000	79700	82300	107000	80800	76400	138000	138000	129000	174000	188000
9	76300	89000	75300	82500	119000	79600	68000	157000	145000	133000	182000	167000
10	76700	81400	78800	87300	128000	82400	69300	181000	154000	141000	194000	133000
11	70000	75500	77600	99100	124000	85200	77100	199000	155000	141000	193000	102000
12	67000	78100	78800	107000	121000	85100	79600	184000	154000	148000	178000	99100
13	67600	75400	80300	106000	124000	80300	85100	184000	153000	155000	159000	106000
14	73500	73200	85800	110000	114000	73200	89000	193000	152000	156000	144000	108000
15	73100	82300	99200	109000	109000	73900	90500	199000	149000	163000	150000	103000
16	75100	85200	99300	111000	93000	79200	89700	202000	151000	177000	170000	98400
17	71600	98200	98800	110000	82600	84700	89500	206000	150000	198000	201000	89800
18	66800	105000	95600	109000	86300	85200	89100	204000	152000	212000	214000	76800
19	65900	102000	94500	112000	85700	79500	89600	197000	157000	218000	204000	74100
20	63400	100000	87800	109000	85300	80200	87200	201000	159000	217000	183000	88900
21	65400	99700	84600	114000	83200	90900	88800	200000	155000	212000	170000	108000
22	60800	89500	98500	113000	79600	97000	88900	199000	147000	187000	159000	117000
23	59000	84000	101000	110000	79400	94100	83900	199000	143000	166000	139000	122000
24	67500	83000	107000	103000	77500	96400	87400	201000	144000	146000	127000	111000
25	66000	87500	109000	101000	77700	99800	91100	201000	143000	148000	136000	105000
26	76500	89100	104000	99900	78700	100000	91300	190000	138000	166000	187000	101000
27	85400	91400	107000	101000	81200	100000	96000	189000	133000	193000	215000	98000
28	83700	91000	107000	104000	79600	98100	122000	190000	129000	202000	195000	94700
29	80500	88000	111000	112000	84700	94900	123000	188000	128000	192000	174000	95400
30	86100	92700	115000	112000	---	95600	125000	186000	136000	172000	171000	96700
31	87000	---	105000	109000	---	96000	---	184000	---	171000	146000	---
TOTAL	2209700	2708300	2936900	3181400	2804800	2710000	2720600	5370000	4458000	5117000	5560000	3539900
MEAN	71280	90280	94740	102600	96720	87420	90690	173200	148600	165100	179400	118000
MAX	87000	105000	115000	114000	128000	100000	125000	206000	181000	218000	215000	197000
MIN	59000	73200	75300	82300	77500	73200	68000	109000	128000	129000	127000	74100
AC-FT	4383000	5372000	5825000	6310000	5563000	5375000	5396000	10650000	8842000	10150000	11030000	7021000

CAL YR 1975 TOTAL 34643100 MEAN 94910 MAX 180000 MIN 48000 AC-FT 68710000
WTR YR 1976 TOTAL 43316600 MEAN 118400 MAX 218000 MIN 59000 AC-FT 85920000

12399900 BIG SHEEP CREEK NEAR ROSSLAND, BRITISH COLUMBIA

LOCATION.--Lat 49°01'00", long 117°56'40", just upstream from bridge on Rossland-Cascade highway, approximately 8 mi (12.9 km) southwest of Rossland.

DRAINAGE AREA.--134 mi^2 347 km^2).

PERIOD OF RECORD.--October 1960 to current year in reports of Geological Survey. August 1929 to September 1930 and April 1949 to September 1960 in reports of Department of Northern Affairs and National Resources, Canada.

GAGE.--Water-stage recorder. Prior to April 1949, nonrecording gage near present site.

COOPERATION.--Records furnished by Department of the Environment, Canada.

AVERAGE DISCHARGE.--28 years (water years 1930, 1950-76), 201 ft^3/s (5.692 m^3/s), 145,600 acre-ft/yr (180 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,700 ft^3/s (76.5 m^3/s) May 12, 1954, gage height, 6.75 ft (2.057 m); minimum, 2.3 ft^3/s (0.065 m^3/s) Nov. 7, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,070 ft^3/s (58.6 m^3/s) May 11, gage height, 5.96 ft (1.817 m); minimum daily, 22 ft^3/s (0.62 m^3/s) Oct. 2, 5, 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	33	66	67	53	42	94	639	598	276	63	233
2	22	32	67	70	52	40	93	805	558	317	80	208
3	23	31	79	66	53	40	100	946	526	274	99	194
4	23	36	108	66	52	40	114	976	486	242	100	180
5	22	51	135	65	52	40	151	1040	468	225	97	168
6	24	62	133	63	52	40	232	1070	454	213	106	178
7	24	68	128	61	52	40	315	1130	476	202	118	169
8	24	69	123	61	52	40	450	1380	547	200	116	156
9	23	66	121	60	54	39	619	1590	719	194	110	145
10	23	65	119	58	52	39	672	1670	763	176	106	134
11	23	59	113	58	50	40	695	1900	697	163	100	126
12	23	58	106	57	48	39	739	1500	624	158	96	119
13	22	56	105	54	48	38	702	1270	564	150	95	111
14	22	55	107	53	48	38	648	1330	516	136	102	103
15	23	75	107	54	47	38	630	1160	505	127	119	97
16	23	118	100	53	47	38	547	1070	599	120	151	92
17	24	121	95	54	47	39	488	1130	637	113	197	87
18	23	111	95	58	46	42	457	1060	580	104	198	82
19	23	100	91	57	46	49	429	935	548	97	192	79
20	23	99	88	55	45	49	422	994	520	92	243	75
21	23	94	83	54	44	48	417	984	477	88	247	69
22	24	93	87	54	44	49	395	877	461	83	221	67
23	23	92	78	55	44	56	380	867	442	78	206	64
24	23	91	77	53	44	58	388	970	395	73	191	62
25	25	86	76	53	44	58	431	1020	365	70	256	60
26	26	86	80	53	44	59	442	859	328	65	435	58
27	27	82	80	55	43	59	442	779	304	61	421	56
28	29	79	74	54	43	59	464	832	283	58	381	53
29	32	68	72	54	42	61	488	751	267	58	337	51
30	39	67	76	54	---	62	537	675	265	65	300	49
31	37	---	72	54	---	74	---	635	---	68	264	---
TOTAL	768	2203	2941	1783	1388	1453	12981	32844	14972	4346	5747	3325
MEAN	24.8	73.4	94.9	57.5	47.9	46.9	433	1059	499	140	185	111
MAX	39	121	135	70	54	74	739	1900	763	317	435	233
MIN	22	31	66	53	42	38	93	635	265	58	63	49
AC-FT	1520	4370	5830	3540	2750	2880	25750	65150	29700	8620	11400	6600

CAL YR 1975 TOTAL 71468 MEAN 196 MAX 1840 MIN 12 AC-FT 141800
WTR YR 1976 TOTAL 84751 MEAN 232 MAX 1900 MIN 22 AC-FT 168100

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

12400520 COLUMBIA RIVER AT NORTHPORT, WA
(National stream-quality accounting network station)

LOCATION.--Lat 48°55'21", long 117°46'32", in SW¼SW¼ sec.33, T.40 N., R.40 E., Stevens County, Hydrologic Unit 17020001, at State Highway 25 bridge at Northport, 9.9 mi (15.9 km) downstream from gaging station at international boundary, and at mile 735.1 (1,182.8 km).

DRAINAGE AREA.--60,200 mi² (155,900 km²), approximately.

PERIOD OF RECORD.--Water years 1910-11, 1952 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1951 to September 1975, April to September 1976.
pH: November 1951 to September 1969.
WATER TEMPERATURES: November 1951 to current year.
SUSPENDED SEDIMENT DISCHARGE: February 1910 to January 1911.

INSTRUMENTATION.--Temperature recorder since October 1974; specific conductance recorder since April 1976.

REMARKS.--Prior to November 1951 published as "at Northport". November 1951 to September 1957 published as 12399500 "at international boundary", October 1957 to September 1963 as "at Northport. October 1963 to September 1973 as "at international boundary."

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 285 micromhos Apr. 2, 1972; minimum, 96 micromhos Aug. 7, 1976.
WATER TEMPERATURES: Maximum, 21.0°C May 14, 19, 1959; minimum, 0.0°C on several days during January in 1960, 1962 and 1963.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded during period April to August, 180 micromhos May 24; minimum recorded, 96 micromhos Aug. 7.
WATER TEMPERATURES: Maximum, 16.5°C July 25-28, July 30 to Aug. 1; minimum, 2.0°C Mar. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
OCT												
01...	1130	65500	107	7.4	15.5	2	30	4	6	57	7	17
NOV												
11...	1000	67400	157	7.2	7.4	1	23	6	2	76	11	22
DEC												
10...	1100	85400	150	7.8	4.3	3	20	4	4	86	16	25
JAN												
06...	1015	83300	138	7.1	3.6	1	3	2	<1	83	11	25
FEB												
03...	0900	97300	156	7.2	3.5	3	4	1	<1	78	11	22
MAR												
02...	1000	78000	173	7.6	2.8	2	<1	<1	<1	91	22	28
APR												
05...	1100	92500	147	7.2	4.7	2	B20	4	<1	75	8	22
MAY												
04...	0930	111000	134	7.0	7.7	2	23	1	2	69	5	20
JUN												
02...	1100	171000	160	7.6	9.3	--	6	3	1	73	14	22
29...	0920	115000	130	7.2	12.8	2	150	23	8	62	6	18
AUG												
05...	1345	138000	100	7.8	14.6	1	98	33	6	54	7	17
31...	1030	170000	99	7.2	14.8	1	52	88	2	56	6	17

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT												
01...	3.6	1.3	.6	61	50	3.9	10	.7	.1	3.7	67	67
NOV												
11...	5.0	2.1	.8	79	65	8.0	12	1.1	.2	4.6	94	87
DEC												
10...	5.6	2.2	.8	85	70	2.2	13	1.4	.2	5.3	94	95
JAN												
06...	5.1	2.1	.9	88	72	11	15	1.0	.3	4.6	98	97
FEB												
03...	5.7	1.6	.8	82	67	8.3	16	1.1	.2	4.2	96	92
MAR												
02...	5.2	2.0	1.0	84	69	3.4	20	1.6	.6	4.7	95	105
APR												
06...	4.9	1.8	.9	82	67	8.3	15	.8	.2	4.7	91	91
MAY												
04...	4.6	2.1	.8	78	64	12	9.6	.7	.1	6.1	90	82
JUN												
02...	4.5	1.8	.8	72	59	2.9	10	1.2	.2	5.8	77	82
29...	4.2	1.7	.7	69	57	7.0	13	2.0	.2	4.9	79	79
AUG												
05...	2.9	1.1	.6	58	48	1.5	7.6	.6	.1	4.0	66	63
31...	3.2	1.4	.6	60	49	6.1	8.0	.7	.1	3.6	63	64

B Results based upon colony counts outside the ideal range.

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	SUS-PENDED SOLIDS (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT 01...	--	.06	.00	.07	.12	.24	.04	.01	1	177	93
NOV 11...	--	.08	.00	.08	.04	.22	.03	.03	2	364	96
DEC 10...	--	.08	.00	.08	.05	.12	.04	.03	6	1380	98
JAN 06...	--	.12	.00	.12	.04	.18	.03	.03	2	450	92
FEB 03...	--	.13	.00	.13	.06	.16	.03	.02	3	788	99
MAR 02...	--	.11	.00	.11	.10	.25	.05	.02	5	1050	87
APR 06...	--	.11	.00	.11	.02	.15	.05	.02	5	1250	90
MAY 04...	--	.06	.00	.06	.05	.19	.03	.01	8	2400	73
JUN 02...	--	.08	.00	.08	.06	.17	.03	.01	12	5540	95
29...	--	.02	.00	.02	.04	.26	.03	.01	6	1860	90
AUG 05...	--	.08	.01	.09	.04	.17	.01	.01	7	2610	83
31...	1	.05	.00	.05	.03	.11	.01	.00	2	918	47

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT 01...	1130	0	0	0	1	10	10	<50	0	10	5	20
JAN 06...	1015	0	0	10	1	0	0	<50	0	<10	0	60
APR 06...	1100	0	0	<10	1	0	0	<50	0	10	4	110
JUN 29...	0920	0	0	1	0	10	10	0	0	0	0	90

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 01...	10	0	2	10	10	.0	.0	0	0	60	40	2.3
JAN 06...	0	<100	3	10	0	.0	.0	0	0	60	20	1.6
APR 06...	10	<100	5	10	0	.0	.0	0	0	10	10	1.1
JUN 29...	0	6	6	10	0	<.5	<.5	0	0	40	30	2.1

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
SAMPLING DEPTH 10.00(FT.).

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1							---	---	---	140	137	138
2							---	---	---	139	136	138
3							---	---	---	138	135	137
4							---	---	---	138	133	135
5							---	---	---	141	135	138
6							147	141	143	145	138	143
7							148	140	144	146	141	144
8							157	149	153	145	142	144
9							156	147	153	145	141	143
10							159	154	156	144	139	141
11							157	155	156	145	141	143
12							156	153	154	151	147	149
13							153	145	149	156	154	155
14							154	146	151	160	157	159
15							155	153	154	163	161	162
16							154	152	153	166	164	165
17							154	148	152	167	166	167
18							155	151	153	169	166	167
19							153	149	151	172	170	171
20							151	146	149	177	174	176
21							153	147	151	178	178	178
22							155	153	154	174	170	172
23							155	151	154	177	171	174
24							154	151	153	180	170	175
25							153	150	152	174	167	170
26							152	148	151	177	174	176
27							149	139	144	179	177	178
28							144	141	142	179	174	176
29							142	140	141	175	168	172
30							141	135	140	177	169	173
31							---	---	---	174	164	168
MONTH							159	135	150	180	133	159

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	169	161	164	126	124	125	104	103	104			
2	162	155	159	123	120	121	103	101	102			
3	158	155	157	121	120	121	102	100	101			
4	157	154	155	123	121	122	101	100	101			
5	155	151	153	125	123	123	101	98	100			
6	155	149	152	123	120	122	100	98	99			
7	154	149	152	121	120	120	108	96	100			
8	152	147	149	121	120	120	109	106	107			
9	150	146	148	121	119	121	111	104	108			
10	145	142	143	120	119	120	112	106	109			
11	141	138	140	121	119	120	111	107	109			
12	139	136	137	121	120	120	111	106	108			
13	135	133	134	121	119	120	110	106	107			
14	137	132	134	121	119	120	111	107	109			
15	136	134	135	121	119	121	108	102	105			
16	136	133	135	119	117	118	105	100	103			
17	136	131	134	117	115	116	104	101	103			
18	140	134	137	115	114	114	105	101	103			
19	141	137	139	114	112	113	105	99	101			
20	141	137	139	112	110	111	103	98	101			
21	140	138	139	111	110	111	106	101	103			
22	140	138	139	113	111	112	105	102	103			
23	139	135	137	113	111	112	107	102	105			
24	137	135	136	111	111	111	108	103	106			
25	135	132	133	112	110	111	107	100	105			
26	134	129	131	111	109	110	102	97	99			
27	133	127	130	109	106	108	100	97	98			
28	134	128	130	106	105	105	102	98	100			
29	134	129	133	105	104	104	101	99	100			
30	129	126	128	105	103	105	103	98	100			
31	---	---	---	105	103	104	101	98	100			
MONTH	169	126	141	126	103	116	112	96	103			
YEAR	180	96	133									

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1.300 CELLS/ML

OCT. 1, 1975 1130 HOURS		_ORGANISM__NAME	_COMMON__NAME		CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE				
		.CHLOROPHYCEAE					
		..CHLOROCOCCALES					
		...OOCYSTACEAE					
		....ANKISTRODESMUS			53	4	
		..VOLVOCALES					
		...CHLAMYDOMONADACEAE					
		....CHLAMYDOMONAS			53	4	
				TOTALS	110	8	1.000=DIVERSITY
		CHRYSOPHYTA					
		.BACILLARIOPHYCEAE	DIATOMS				
		..CENTRALES	CENTRIC				
		...COSCINODISCACEAE					
	D	....CYCLOTELLA			590	46	
		..PENNALES	PENNATE				
		...ACHNANTHACEAE					
	L	....ACHNANTHES				0	
		...CYMBELLACEAE					
	L	....CYMBELLA				0	
		...FRAGILARIACEAE					
	D	....ASTERIONELLA			210	17	
	L	....SYNEDRA				0	
		...NITZSCHIACEAE					
	D	....NITZSCHIA			210	17	
				TOTALS	1.000	80	1.403=DIVERSITY
		.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE				
		..CHRYSOMONADALES					
		...OCHROMONADACEAE					
		....DINOBRYON			160	12	
				TOTALS	160	12	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:

PHYL/DIV	0.414
CLASS	0.941
ORDER	1.801
FAMILY	2.135
GENERA	2.135

SAMPLING METHOD - EDI

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1,500 CELLS/ML

NOV. 11, 1975 1000 HOURS	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
D	....ANKISTRODESMUS			230	15	
	..TETRASPORALES					
	...COCCOMYXACEAE					
	....ELAKATOTHRIX			30	2	
			TOTALS	260	17	0.523=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
	....CYCLOTELLA			150	10	
D	....MELOSIRA			230	15	
	..PENNALES	PENNATE				
	...ACHNANTHACEAE					
	....ACHNANTHES			30	2	
	...CYMBELLACEAE					
	....EPITHEMIA			15	1	
	...FRAGILARIACEAE					
	....ASTERIONELLA			180	12	
	....FRAGILARIA			75	5	
	...NAVICULACEAE	NAVICULOID				
	....NAVICULA			30	2	
	...NITZSCHIACEAE					
	....NITZSCHIA			120	8	
			TOTALS	830	55	2.610=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE				
	.MYXOPHYCEAE					
	..OSCILLATORIALES	FILAMENTOUS				
	...OSCILLATORIACEAE					
D	....LYNGBYA			380	26	
			TOTALS	380	26	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 1.409
CLASS 1.409
ORDER 2.064
FAMILY 2.576
GENERA 2.950

SAMPLING METHOD - EDI

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

360 CELLS/ML

DEC. 10, 1975 1100 HOURS	_ORGANISM__NAME____________	_COMMON__NAME______		CELLS/ML	PER_CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE			50	14	
	....ANKISTRODESMUS					
	...SCENEDESMACEAE			25	7	
	....ACTINASTRUM		TOTALS	75	21	0.918=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE			6	2	
	....CYCLOTELLA			56	16	
D	....MELOSIRA					
	..PENNALES	PENNATE				
	...ACHNANTHACEAE			6	2	
	....ACHNANTHES					
	...CYMBELLACEAE				0	
L	....CYMBELLA			6	2	
	....EPITHEMIA			6	2	
	....RHOPALODIA					
	...FRAGILARIACEAE			130	35	
D	....ASTERIONELLA			38	11	
	....FRAGILARIA				0	
L	....SYNEDRA					
	...GOMPHONEMATACEAE			6	2	
	....GOMPHONEMA					
	...NAVICULACEAE	NAVICULOID		6	2	
	....NAVICULA					
	...NITZSCHIACEAE			6	2	
	....DENTICULA			19	5	
	....NITZSCHIA		TOTALS	280	81	2.487=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:

PHYL/DIV	0.742
CLASS	0.742
ORDER	1.346
FAMILY	2.369
GENERA	2.899

SAMPLING METHOD - EDI

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                                   IDENTIFICATION OF PHYTOPLANKTON

                                            440 CELLS/ML

JAN. 6, 1976   _ORGANISM__NAME_______________   _COMMON__NAME______  CELLS/ML      PER_CENT
 1015 HOURS
               CHLOROPHYTA                      GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
               ....ANKISTRODESMUS
                                                                     -----26         --6
                                                          TOTALS          26           6         0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE               DIATOMS
               ..CENTRALES                      CENTRIC
               ...COSCINODISCACEAE
               ....CYCLOTELLA                                             39           9
               ....MELOSIRA                                                7           1
               ..PENNALES                       PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                              7           1
               ....RHOICOSPHENIA                                          20           4
               ...CYMBELLACEAE
               ....CYMBELLA                                                7           1
               ...FRAGILARIACEAE
             D ....ASTERIONELLA                                           98          22
             D ....FRAGILARIA                                            160          37
             L ....SYNEDRA                                                             0
               ...NAVICULACEAE                  NAVICULOID
               ....NAVICULA                                                7           1
               ...NITZSCHIACEAE
               ....NITZSCHIA
                                                                     -----20         --4
                                                          TOTALS         360          80         2.241=DIVERSITY

               CYANOPHYTA                       BLUE-GREEN ALGAE
               .MYXOPHYCEAE
               ..OSCILLATORIALES                FILAMENTOUS
               ...OSCILLATORIACEAE
               ....OSCILLATORIA
                                                                     -----52         -12
                                                          TOTALS          52          12         0.000=DIVERSITY

             NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SLIDE MOUNTING, GRAVIMETRIC
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                  PHYL/DIV 0.834
                                     CLASS 0.834
                                     ORDER 1.282
                                    FAMILY 2.010
                                    GENERA 2.680
                   SAMPLING METHOD - EDI

                                           1,000 CELLS/ML

FEB. 3, 1976   _ORGANISM__NAME_______________   _COMMON__NAME______  CELLS/ML      PER_CENT
 0900 HOURS
               CHLOROPHYTA                      GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
               ....ANKISTRODESMUS
                                                                     -----21         --2
                                                          TOTALS          21           2         0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE               DIATOMS
               ..CENTRALES                      CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                            570          56
               ....STEPHANODISCUS                                         21           2
               ..PENNALES                       PENNATE
               ...CYMBELLACEAE
               ....CYMBELLA                                               21           2
               ...FRAGILARIACEAE
               ....ASTERIONELLA                                           85           8
             D ....FRAGILARIA                                            230          23
               ....SYNEDRA                                                21           2
               ...NITZSCHIACEAE
               ....NITZSCHIA
                                                                     -----21         --2
                                                          TOTALS         980          95         1.731=DIVERSITY

               PYRRHOPHYTA                      FIRE ALGAE
               .DINOPHYCEAE                     DINOFLAGELLATES
               ..PERIDINIALES
               ...PERIDINIACEAE
               ....PERIDINIUM
                                                                     -----21         --2
                                                          TOTALS          21           2         0.000=DIVERSITY

             NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                  PHYL/DIV 0.292
                                     CLASS 0.292
                                     ORDER 1.217
                                    FAMILY 1.447
                                    GENERA 1.951
                   SAMPLING METHOD - EDI
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12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                          IDENTIFICATION OF PHYTOPLANKTON

                                  1.600 CELLS/ML

MAR. 2, 1976   _ORGANISM__NAME_____________   _COMMON__NAME______  CELLS/ML      PER_CENT
 1000 HOURS
               CHRYSOPHYTA
               .BACILLARIOPHYCEAE              DIATOMS
               ..CENTRALES                     CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                        1.500          95
             L ....MELOSIRA                                                          0
               ..PENNALES                      PENNATE
               ...CYMBELLACEAE
               ....CYMBELLA                                             72           5
               ...FRAGILARIACEAE
             L ....ASTERIONELLA                                                      0
               ...NAVICULACEAE                 NAVICULOID
             L ....DIPLONEIS                                       ------          __0
                                                          TOTALS     1.600         100      0.267=DIVERSITY

               NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                     L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                     ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                     DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                       ORDER 0.267
                                      FAMILY 0.267
                                      GENERA 0.267
                     SAMPLING METHOD - EDI

                                  1.400 CELLS/ML

APR. 6, 1976   _ORGANISM__NAME_____________   _COMMON__NAME______  CELLS/ML      PER_CENT
 1100 HOURS
               CHLOROPHYTA                     GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
               ....ANKISTRODESMUS                                  -----30          __2
                                                          TOTALS        30           2      0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE              DIATOMS
               ..CENTRALES                     CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                          270          20
               ..PENNALES                      PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                          120           9
               ...FRAGILARIACEAE
             D ....ASTERIONELLA                                        850          62
               ....FRAGILARIA                                           30           2
               ...GOMPHONEMATACEAE
               ....GOMPHONEMA                                           30           2
               ...NITZSCHIACEAE
               ....NITZSCHIA                                       -----30          __2
                                                          TOTALS     1.300          97      1.570=DIVERSITY

               NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                     ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                     DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                    PHYL/DIV 0.154
                                       CLASS 0.154
                                       ORDER 0.868
                                      FAMILY 1.549
                                      GENERA 1.689
                     SAMPLING METHOD - EDI
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12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
IDENTIFICATION OF PHYTOPLANKTON

2.990 CELLS/ML

		ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
MAY 4, 1976 0930 HOURS		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..VOLVOCALES				
		...CHLAMYDOMONADACEAE				
		....CHLAMYDOMONAS		150	5	
			TOTALS	150	5	0.000=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
	D	....CYCLOTELLA		1.200	41	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		74	3	
		....COCCONEIS		74	3	
		...FRAGILARIACEAE				
	D	....ASTERIONELLA		520	18	
		....SYNEDRA		220	8	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		74	3	
		...NAVICULACEAE	NAVICULOID			
		....NAVICULA		150	5	
		...NITZSCHIACEAE				
		....NITZSCHIA		370	13	
		...TABELLARIACEAE				
		....TABELLARIA		74	3	
			TOTALS	2.700	97	2.452=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 0.292
CLASS 0.292
ORDER 1.228
FAMILY 2.341
GENERA 2.618

SAMPLING METHOD - EDI

3.300 CELLS/ML

		ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
JUNE 2, 1976 1100 HOURS		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
	D	....CYCLOTELLA		1.200	37	
		....MELOSIRA		160	5	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		54	2	
		...CYMBELLACEAE				
		....AMPHORA		54	2	
		...FRAGILARIACEAE				
	D	....ASTERIONELLA		540	17	
	D	....FRAGILARIA		600	18	
		...NITZSCHIACEAE				
	D	....NITZSCHIA		600	18	
			TOTALS	3.200	99	2.286=DIVERSITY
		.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
		..CHRYSOMONADALES				
		...OCHROMONADACEAE				
		....DINOBRYON		54	2	
			TOTALS	54	2	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
CLASS 0.122
ORDER 1.089
FAMILY 1.800
GENERA 2.370

SAMPLING METHOD - EDI

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                              IDENTIFICATION OF PHYTOPLANKTON

                                     3,900 CELLS/ML

JUNE 29, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML      PER_CENT
  0920 HOURS
               CHLOROPHYTA                    GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
               ....ANKISTRODESMUS                                       22             1
               ..TETRASPORALES
               ...PALMELLACEAE
               ....GLOEOCYSTIS                                     ____220           __6
                                                           TOTALS      240             7       0.439=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE             DIATOMS
               ..CENTRALES                    CENTRIC
               ...COSCINODISCACEAE
               ....CYCLOTELLA                                          520            13
               ....MELOSIRA                                            390            10
               ..PENNALES                     PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                           22             1
               ....COCCONEIS                                            22             1
               ...DIATOMACEAE
               ....DIATOMA                                              22             1
               ...FRAGILARIACEAE
             D ....ASTERIONELLA                                      1,100            28
               ....FRAGILARIA                                          350             9
               ....SYNEDRA                                              22             1
               ...NAVICULACEAE                NAVICULOID
               ....NAVICULA                                             43             1
               ...NITZSCHIACEAE
               ....NITZSCHIA                                       _____87           __2
                                                           TOTALS    2,600            67       2.286=DIVERSITY

               .CHRYSOPHYCEAE                 YELLOW-BROWN ALGAE
               ..CHRYSOMONADALES
               ...OCHROMONADACEAE
               ....DINOBRYON                                       ____130           __3
                                                           TOTALS      130             3       0.000=DIVERSITY

               CYANOPHYTA                     BLUE-GREEN ALGAE
               .MYXOPHYCEAE
               ..OSCILLATORIALES              FILAMENTOUS
               ...OSCILLATORIACEAE
             D ....OSCILLATORIA                                    ____930           _24
                                                           TOTALS      930            24       0.000=DIVERSITY

               PYRRHOPHYTA                    FIRE ALGAE
               .DINOPHYCEAE                   DINOFLAGELLATES
               ..GYMNODINIALES
               ...GYMNODINIACEAE
               ....GYMNODINIUM                                     _____22           __1
                                                           TOTALS       22             1       0.000=DIVERSITY

             NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                         PHYL/DIV 1.147
                                            CLASS 1.340
                                            ORDER 1.986
                                           FAMILY 2.300
                                           GENERA 2.878
                   SAMPLING METHOD - EDI
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12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1,300 CELLS/ML

AUG. 5, 1976 1345 HOURS	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		10	1	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....COSMARIUM		10	1	
		TOTALS	20	2	1.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		81	6	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		10	1	
	...FRAGILARIACEAE				
	....ASTERIONELLA		180	14	
	....FRAGILARIA		110	8	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		10	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		150	11	
		TOTALS	540	41	2.131=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		61	5	
		TOTALS	61	5	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
	D ....OSCILLATORIA		720	53	
		TOTALS	720	53	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV 1.093
CLASS 1.304
ORDER 1.565
FAMILY 1.975
GENERA 2.184

SAMPLING METHOD - EDI

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                              IDENTIFICATION OF PHYTOPLANKTON

                                     1,800 CELLS/ML

AUG. 31, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML    PER_CENT
 1030 HOURS
                CHLOROPHYTA                    GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
              L ....ANKISTRODESMUS                                                0
                ....DICTYOSPHAERIUM                                  ---240      13
                                                          TOTALS        240      13      0.165=DIVERSITY
                CHRYSOPHYTA
                .BACILLARIOPHYCEAE             DIATOMS
                ..CENTRALES                    CENTRIC
                ...COSCINODISCACEAE
                ....CYCLOTELLA                                           12       1
              L ....MELOSIRA                                                      0
                ..PENNALES                     PENNATE
                ...ACHNANTHACEAE
              L ....ACHNANTHES                                                    0
                ...CYMBELLACEAE
                ....CYMBELLA                                             12       1
                ...FRAGILARIACEAE
                ....ASTERIONELLA                                        140       8
                ....FRAGILARIA                                           88       5
                ....SYNEDRA                                              29       2
                ...NAVICULACEAE                NAVICULOID
                ....NAVICULA                                             12       1
                ...NITZSCHIACEAE
                ....NITZSCHIA                                         ---18       1
                                                          TOTALS        320      19      2.309=DIVERSITY
                .CHRYSOPHYCEAE                 YELLOW-BROWN ALGAE
                ..CHRYSOMONADALES
                ...OCHROMONADACEAE
                ....DINOBRYON                                         ---12       1
                                                          TOTALS         12       1      0.000=DIVERSITY
                CYANOPHYTA                     BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..CHROOCOCCALES                COCCOID
                ...CHROOCOCCACEAE
                ....ANACYSTIS                                            47       3
                ..OSCILLATORIALES              FILAMENTOUS
                ...OSCILLATORIACEAE
              D ....OSCILLATORIA                                    --1,100      64
                                                          TOTALS      1,200      67      0.242=DIVERSITY

             NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                     PHYL/DIV 1.236
                                        CLASS 1.278
                                        ORDER 1.497
                                       FAMILY 1.656
                                       GENERA 1.890
```

SAMPLING METHOD - EDI

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m²)		Chlorophyll a (mg/m²)	Chlorophyll b (mg/m²)	Biomass pigment ratio	Sampling method
		Dry weight	Ash weight				
Oct. 1	30	6.5	4.0	41	0.3	62	Polyethylene strip
Jan. 6	27	11	8.6	0.2	0.0	9,900	
June 30	28	0.154	0.077	0.214	0.000	360	

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.0	15.5	16.0	9.5	9.0	9.5	5.0	4.5	5.0	3.5	3.0	3.5
2	16.0	15.5	16.0	9.5	9.5	9.5	5.0	4.5	5.0	4.0	3.5	3.5
3	16.0	15.5	15.5	9.5	9.5	9.5	5.0	4.5	5.0	3.5	3.5	3.5
4	15.5	15.0	15.5	9.5	9.0	9.5	4.5	4.5	4.5	3.5	3.5	3.5
5	15.0	14.5	15.0	9.5	9.0	9.5	4.0	4.0	4.0	3.5	3.5	3.5
6	14.5	14.0	14.5	9.5	9.0	9.0	4.0	3.5	4.0	3.5	3.5	3.5
7	14.5	14.0	14.0	9.0	8.5	8.5	4.0	4.0	4.0	3.5	3.5	3.5
8	14.0	14.0	14.0	8.5	8.5	8.5	4.0	4.0	4.0	3.5	3.5	3.5
9	14.0	14.0	14.0	8.5	8.0	8.0	4.0	4.0	4.0	3.5	3.0	3.5
10	14.0	14.0	14.0	8.0	7.5	8.0	4.5	4.0	4.5	3.5	3.0	3.5
11	14.0	13.5	14.0	7.5	7.5	7.5	4.0	4.0	4.0	4.0	3.0	3.5
12	14.0	13.5	13.5	7.5	7.5	7.5	4.0	4.0	4.0	4.0	3.0	3.5
13	13.5	13.5	13.5	7.5	7.0	7.5	4.0	3.0	3.5	3.5	3.0	3.0
14	13.5	13.5	13.5	7.5	7.5	7.5	3.5	2.5	3.0	3.0	3.0	3.0
15	13.5	13.0	13.5	7.5	7.0	7.0	3.5	3.5	3.5	3.5	3.0	3.5
16	13.0	13.0	13.0	7.0	6.5	6.5	3.5	3.5	3.5	3.5	3.0	3.5
17	13.0	13.0	13.0	6.5	6.5	6.5	3.5	3.5	3.5	4.0	3.5	3.5
18	13.0	12.5	12.5	7.0	6.5	6.5	3.5	3.5	3.5	4.0	3.0	3.5
19	12.5	12.0	12.5	6.5	6.0	6.5	3.5	3.5	3.5	4.0	3.0	3.5
20	12.5	12.0	12.5	6.5	6.5	6.5	3.5	3.5	3.5	4.0	3.0	3.5
21	12.0	12.0	12.0	6.0	5.5	6.0	3.5	3.5	3.5	4.0	3.0	3.5
22	12.0	11.5	12.0	6.0	6.0	6.0	4.0	4.0	4.0	3.5	3.0	3.5
23	11.5	11.5	11.5	6.0	6.0	6.0	4.5	4.0	4.0	3.5	3.0	3.5
24	11.5	11.0	11.5	6.0	6.0	6.0	4.5	4.0	4.0	3.5	3.0	3.5
25	11.0	10.5	11.0	6.0	5.5	6.0	4.5	4.0	4.5	3.5	3.0	3.0
26	10.5	10.5	10.5	6.0	5.5	6.0	4.5	4.0	4.5	3.5	3.0	3.0
27	10.5	10.5	10.5	6.0	5.5	5.5	4.5	4.0	4.0	3.5	3.0	3.5
28	10.5	10.0	10.5	5.5	5.5	5.5	4.0	3.5	4.0	3.5	3.0	3.5
29	10.0	10.0	10.0	5.5	5.0	5.0	4.0	4.0	4.0	3.5	3.5	3.5
30	10.0	9.5	10.0	5.0	4.5	5.0	4.0	4.0	4.0	3.5	3.0	3.5
31	9.5	9.5	9.5	---	---	---	4.5	3.5	4.0	4.0	3.0	3.5
MONTH	16.0	9.5	13.0	9.5	4.5	7.0	5.0	2.5	4.0	4.0	3.0	3.5

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4.0	3.0	3.5	3.5	2.5	3.0	4.5	4.0	4.0	7.5	6.5	7.0
2	3.5	3.0	3.5	3.0	3.0	3.0	4.5	4.0	4.0	7.5	7.0	7.5
3	4.0	3.0	3.5	2.5	2.5	2.5	4.5	4.0	4.5	8.0	7.5	7.5
4	3.5	3.0	3.0	2.5	2.5	2.5	4.5	4.0	4.5	8.0	7.5	8.0
5	3.0	3.0	3.0	2.5	2.5	2.5	5.0	4.0	4.5	8.0	8.0	8.0
6	3.0	2.5	3.0	3.5	2.5	2.5	5.0	4.5	5.0	8.5	7.5	8.0
7	3.0	2.5	2.5	4.0	3.0	3.0	5.5	5.0	5.0	8.5	8.0	8.0
8	3.0	2.5	2.5	4.0	2.0	2.5	5.5	5.5	5.5	8.5	8.0	8.0
9	3.0	2.5	3.0	3.5	2.5	3.0	6.0	5.5	6.0	8.5	8.0	8.5
10	3.0	2.5	3.0	3.0	3.0	3.0	6.5	5.5	6.0	9.0	8.5	8.5
11	4.0	3.0	3.5	3.5	2.5	3.0	6.5	6.0	6.5	8.5	8.5	8.5
12	4.0	3.5	4.0	3.5	2.5	3.0	7.0	6.5	6.5	9.0	8.5	9.0
13	4.0	3.5	3.5	4.0	3.0	3.5	7.0	6.5	6.5	9.0	9.0	9.0
14	4.0	3.0	3.5	4.0	3.0	3.5	7.0	6.5	7.0	9.0	8.5	9.0
15	3.5	3.0	3.0	4.0	2.5	3.5	6.5	6.5	6.5	9.0	8.5	9.0
16	3.5	3.0	3.0	4.0	3.0	3.5	6.5	6.0	6.5	9.5	9.0	9.0
17	3.0	2.5	3.0	4.0	3.5	4.0	6.0	5.5	6.0	9.5	9.0	9.5
18	3.5	3.0	3.0	4.0	3.5	4.0	6.0	5.5	6.0	9.5	9.0	9.5
19	3.5	2.5	3.0	4.5	3.5	4.0	6.0	5.5	6.0	10.0	9.5	9.5
20	3.5	2.5	3.0	4.5	3.5	4.0	6.0	6.0	6.0	9.5	9.5	9.5
21	3.5	3.0	3.0	4.5	3.5	4.0	6.5	5.5	6.0	10.0	9.5	9.5
22	4.0	3.0	3.5	4.0	3.5	3.5	6.5	6.0	6.5	10.0	9.5	9.5
23	3.5	3.5	3.5	4.0	3.5	3.5	6.5	6.0	6.5	9.5	9.5	9.5
24	3.5	3.5	3.5	3.5	3.5	3.5	7.0	6.5	6.5	10.0	9.5	10.0
25	4.0	3.5	3.5	4.0	3.5	3.5	7.0	6.5	7.0	10.0	9.5	9.5
26	4.0	3.5	3.5	4.0	4.0	4.0	7.0	6.5	7.0	9.5	9.5	9.5
27	3.5	3.0	3.5	4.0	3.5	4.0	7.0	6.5	7.0	9.5	9.5	9.5
28	3.5	3.0	3.5	4.0	3.5	3.5	7.0	6.5	6.5	9.5	9.5	9.5
29	4.0	3.0	3.5	4.0	3.5	4.0	7.0	6.5	6.5	10.0	9.5	10.0
30	---	---	---	4.0	3.5	4.0	7.0	6.5	6.5	10.5	10.0	10.0
31	---	---	---	4.0	4.0	4.0	---	---	---	10.0	9.0	9.5
MONTH	4.0	2.5	3.0	4.5	2.0	3.5	7.0	4.0	6.0	10.5	6.5	9.0

12400520 COLUMBIA RIVER AT NORTHPORT, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.5	9.0	9.5	14.0	13.5	13.5	16.5	16.0	16.5	15.5	14.5	15.0
2	9.5	9.0	9.5	14.0	13.5	13.5	16.0	15.5	16.0	15.5	14.5	15.0
3	9.5	9.0	9.5	13.5	13.5	13.5	15.5	15.0	15.0	15.5	15.0	15.5
4	9.5	9.0	9.5	14.0	13.5	13.5	15.0	14.5	15.0	15.5	15.0	15.5
5	10.0	9.5	9.5	14.0	13.5	14.0	15.0	14.5	15.0	16.0	15.0	15.5
6	10.5	9.5	10.0	14.0	13.5	14.0	15.0	14.5	15.0	15.5	15.0	15.0
7	11.0	10.0	10.5	14.0	13.5	14.0	15.5	15.0	15.0	15.0	14.0	14.5
8	11.0	10.5	11.0	14.0	14.0	14.0	15.0	14.5	14.5	14.5	14.0	14.0
9	11.5	11.0	11.0	14.0	13.5	14.0	15.0	14.0	14.5	14.5	14.0	14.0
10	11.5	11.0	11.0	14.0	13.5	14.0	15.0	14.0	14.5	14.5	14.0	14.5
11	11.5	11.0	11.0	14.0	14.0	14.0	15.5	14.5	15.0	15.0	14.0	14.5
12	11.5	11.0	11.0	14.5	14.0	14.5	16.0	15.0	15.5	15.0	14.5	14.5
13	11.0	10.5	11.0	14.5	14.5	14.5	16.0	15.5	15.5	15.0	14.0	14.5
14	11.0	10.5	11.0	15.0	14.0	14.5	16.0	15.5	16.0	14.5	14.0	14.5
15	11.0	11.0	11.0	15.5	14.5	15.0	16.0	15.0	15.5	14.5	14.0	14.5
16	11.5	11.0	11.5	16.0	15.5	15.5	15.5	15.0	15.0	15.0	14.5	14.5
17	11.5	11.0	11.5	15.5	15.0	15.5	15.0	14.0	14.5	15.0	14.5	15.0
18	12.5	11.5	11.5	15.5	14.5	15.0	14.0	13.5	13.5	15.5	15.0	15.0
19	12.5	12.0	12.0	15.5	15.0	15.0	14.0	13.5	14.0	15.5	15.0	15.5
20	12.5	12.0	12.5	15.0	14.5	14.5	14.0	13.5	14.0	15.5	15.0	15.5
21	12.5	12.5	12.5	14.5	13.5	14.0	14.5	14.0	14.0	15.5	15.0	15.0
22	12.5	12.5	12.5	15.0	13.5	14.5	15.5	14.0	14.5	15.5	15.0	15.5
23	13.0	12.5	12.5	16.0	15.0	15.5	16.0	15.0	15.5	15.5	15.0	15.0
24	13.0	12.5	12.5	16.0	15.5	16.0	16.0	15.0	15.5	15.5	15.0	15.0
25	13.0	12.5	12.5	16.5	16.0	16.0	16.0	15.0	15.5	15.5	15.0	15.5
26	13.0	12.5	12.5	16.5	16.0	16.5	15.5	14.5	15.0	15.5	15.5	15.5
27	13.0	12.5	12.5	16.5	15.5	16.0	14.5	14.0	14.0	16.0	15.5	15.5
28	13.0	12.5	13.0	16.5	15.5	16.5	14.0	13.5	14.0	16.0	15.5	15.5
29	13.5	12.5	13.0	15.5	14.5	15.0	14.5	13.5	14.0	16.0	15.5	15.5
30	13.5	13.0	13.5	16.5	16.0	16.5	15.0	14.0	14.5	16.0	15.0	15.5
31	---	---	---	16.5	16.0	16.5	16.0	15.0	15.0	---	---	---
MONTH	13.5	9.0	11.5	16.5	13.5	15.0	16.5	13.5	15.0	16.0	14.0	15.0
YEAR	16.5	2.0	9.0									

12401500 KETTLE RIVER NEAR FERRY, WA
(International gaging station)

LOCATION.--Lat 48°58'53", long 118°45'55", in SE¼NW¼ sec.10, T.40 N., R.32 E., Ferry County, Hydrologic Unit 17020002, on right bank 0.5 mi (0.8 km) upstream from Catherine Creek, 1.3 mi (2.1 km) south of international boundary and Ferry, 3.2 mi (5.1 km) upstream from Toroda Creek, and at mile 84.02 (135.2 km).

DRAINAGE AREA.--2,220 mi^2 (5,750 km^2), approximately.

PERIOD OF RECORD.--August 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,836.8 ft (559.86 m) above mean sea level, international joint adjustment of 1947. Prior to Nov. 23, 1928, nonrecording gage at same site and datum.

REMARKS.--Records excellent. Several small diversions above station for irrigation. No regulation.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--48 years, 1,508 ft^3/s (42.71 m^3/s), 1,093,000 acre-ft/yr (1,350 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft^3/s (600 m^3/s) May 29, 1948, gage height, 21.15 ft (6.447 m); minimum, 14 ft^3/s (0.40 m^3/s), discharge measurement, Jan. 23, 1930, but may have been less during period of ice effect Jan. 18-23, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,400 ft^3/s (379 m^3/s)May 11, gage height, 18.17 ft (5.538 m); minimum, 80 ft^3/s (2.27 m^3/s) Nov. 30, gage height, 9.19 ft (2.801 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	178	238	119	208	210	155	318	4260	6190	5530	710	1940
2	175	243	172	163	200	150	320	5590	5730	5700	765	1760
3	169	240	232	175	185	140	319	6500	5370	4610	1090	1630
4	166	237	304	211	170	130	337	7150	4960	4100	1140	1530
5	163	238	314	231	155	140	373	7700	4620	4050	1120	1480
6	166	279	275	235	140	170	442	8060	4320	3940	1140	1700
7	175	339	263	236	165	202	504	8510	4350	4070	1270	2240
8	183	351	299	234	192	205	612	10100	5100	4130	1290	2010
9	186	331	329	229	205	208	839	11800	6290	3990	1210	1840
10	186	295	324	230	208	212	1200	12500	7940	3320	1200	1680
11	186	276	292	226	208	210	1560	12900	7600	2930	1070	1540
12	183	262	242	218	211	211	1850	11900	6610	2680	974	1430
13	183	261	224	211	211	222	2100	9660	5750	2580	949	1420
14	183	279	216	208	211	221	2280	9600	5080	2290	916	1320
15	183	293	208	211	211	211	2310	8880	5120	2070	1140	1240
16	183	334	215	211	213	226	2090	8480	8930	1920	1410	1180
17	183	347	233	216	214	231	1920	9580	11000	1800	2440	1100
18	183	295	251	229	211	255	1830	10200	9120	1680	2750	1040
19	186	189	261	220	200	277	1770	8460	8760	1530	2230	978
20	258	165	269	190	190	280	1810	8000	8970	1390	2420	928
21	285	145	251	180	211	276	1860	7920	7490	1290	2770	876
22	269	202	231	198	210	268	1810	7230	6650	1230	2190	827
23	249	221	231	210	211	265	1780	7520	7230	1120	1860	787
24	232	251	239	208	214	268	1830	8820	6370	1020	1650	759
25	226	234	243	202	216	268	2080	9750	5440	949	1690	835
26	224	274	250	210	211	268	2130	8330	4760	860	3140	776
27	225	275	254	226	185	264	2190	7370	4220	793	3090	730
28	226	227	238	235	175	257	2470	9840	4130	738	2930	693
29	232	163	234	236	165	246	2840	9060	4620	697	2810	665
30	237	106	251	235	---	243	3350	7290	5550	710	2440	637
31	234	---	243	227	---	276	---	6650	---	738	2160	---
TOTAL	6297	7590	7707	6659	5708	6955	47124	269610	188270	74455	53964	37571
MEAN	203	253	249	215	197	224	1571	8697	6276	2402	1741	1252
MAX	285	351	329	236	216	280	3350	12900	11000	5700	3140	2240
MIN	163	106	119	163	140	130	318	4260	4130	697	710	637
AC-FT	12490	15050	15290	13210	11320	13800	93470	534800	373400	147700	107000	74520

CAL YR 1975 TOTAL 538438 MEAN 1475 MAX 13300 MIN 100 AC-FT 1068000
WTR YR 1976 TOTAL 711910 MEAN 1945 MAX 12900 MIN 106 AC-FT 1412000

12404500 KETTLE RIVER NEAR LAURIER, WA
(International gaging station)

LOCATION.--Lat 48°59'04", long 118°12'55", in SW¼NW¼ sec.11, T.40 N., R.36 E., Ferry County, Hydrologic Unit 17020002, on right bank 1,000 ft (305 m) downstream from Deep Creek, 1.1 mi (1.8 km) south of international boundary, 1.1 mi (1.8 km) southeast of Laurier, and at mile 29.71 (47.80 km).

DRAINAGE AREA.--3,800 mi² (9,800 km²), approximately.

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 737: 1930-31. WSP 862: 1937. WSP 882: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,425.5 ft (434.49 m) above mean sea level, international joint adjustment of 1947. Prior to Jan. 3, 1930, nonrecording gage at same site and datum.

REMARKS.--Records excellent. Diversions for irrigation of about 720 acres (290 hm²) in the United States (for 1946 from United States reports), and 2,090 acres (850 hm²) in Canada from the Canada Year Book for 1940.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--47 years, 2,895 ft³/s (81.99 m³s), 2,097,000 acre-ft/yr (2,590 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) May 29, 1948, gage height, 17.25 ft (5.258 m); minimum, 88 ft³/s (2.49 m³/s) Dec. 1, 1936, gage height, 2.20 ft (0.671 m), but was probably less during winter of 1929-30.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May or June 1894 reached a stage of about 22 ft (6.7 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,400 ft³/s (663 m³/s) May 12, gage height, 13.90 ft (4.237 m); minimum daily, 270 ft³/s (7.65 m³/s) Nov. 30, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	350	554	340	560	572	400	871	7710	11300	10200	1500	3560
2	350	524	470	485	530	360	965	9650	10600	9840	1550	3260
3	350	518	602	520	490	330	957	11500	9880	8530	1930	3010
4	342	512	728	560	440	310	986	12300	9120	7400	2150	2850
5	342	536	901	668	400	340	1110	13200	8580	7190	2110	2710
6	346	596	1270	650	370	430	1400	14000	8070	7210	2150	2690
7	355	650	901	644	440	480	1700	14400	7920	7280	2370	3210
8	360	710	936	638	500	512	2190	16600	8900	7690	2430	3270
9	364	716	922	638	572	506	3110	19400	10800	7620	2380	3040
10	378	680	908	620	584	518	4090	21200	13000	6660	2260	2830
11	386	650	873	620	579	542	4820	22400	13500	5850	2130	2620
12	386	620	800	602	572	538	5540	22000	12300	5380	1970	2460
13	378	602	700	608	560	523	5900	17700	10800	5110	1890	2330
14	378	596	630	554	560	543	5980	17000	9470	4660	1900	2280
15	378	632	590	560	554	545	5980	16500	9250	4210	2110	2140
16	373	789	620	544	560	526	5470	15200	12500	3910	2520	2050
17	386	831	650	608	560	563	4920	15900	17100	3710	3670	1950
18	386	845	700	620	560	605	4610	17800	15700	3490	4900	1840
19	396	668	740	590	530	667	4430	15400	14700	3220	4290	1750
20	450	554	775	530	480	698	4400	14400	15000	2960	4150	1660
21	500	430	680	500	512	681	4550	14400	13500	2760	4950	1590
22	560	510	674	520	524	678	4410	13300	11900	2570	4330	1510
23	602	602	668	548	542	695	4260	13300	11900	2420	3720	1450
24	500	662	680	540	554	706	4280	14800	11300	2220	3310	1400
25	490	639	698	510	560	715	4850	17300	9760	2070	3230	1380
26	480	662	728	540	560	718	5030	15600	8630	1930	4160	1410
27	480	692	704	579	550	719	5000	13300	7690	1780	5430	1330
28	480	500	656	602	460	710	5350	15100	7400	1650	4850	1260
29	490	350	662	620	440	701	5900	16100	8050	1570	4740	1210
30	512	270	680	620	---	695	6530	13300	9610	1530	4340	1170
31	554	---	668	608	---	732	---	12000	---	1530	3910	---
TOTAL	13082	18099	22554	18045	15114	17686	119629	472760	328230	144150	97330	65220
MEAN	422	603	728	582	521	571	3988	15250	10940	4650	3140	2174
MAX	602	845	1270	668	584	732	6530	22400	17100	10200	5430	3560
MIN	342	270	340	485	370	310	871	7710	7400	1530	1500	1170
AC-FT	25950	35900	44740	35790	29980	35080	237300	937700	651000	285900	193100	129400

CAL YR 1975 TOTAL 1020876 MEAN 2797 MAX 21800 MIN 240 AC-FT 2025000
WTR YR 1976 TOTAL 1331899 MEAN 3639 MAX 22400 MIN 270 AC-FT 2642000

KETTLE RIVER BASIN

12404900 KETTLE RIVER NEAR BARSTOW, WA

LOCATION.--Lat 48°47'05", long 118°07'30", in SW¼SW¼ sec.16, T.38 N., R.37 E., Ferry County, Hydrologic Unit 17020002, at county road bridge 0.1 mi (0.2 km) downstream from Toulou Creek, 1.1 mi (1.8 km) east of Barstow and at mile 10.9 (17.5 km).

DRAINAGE AREA.--4,044 mi² (10,474 km²).

PERIOD OF RECORD.--Water years 1960-62, 1963-70 (partial-record station), 1972, October 1974 to September 1976 (discontinued).

COOPERATION.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
07...	1415	357	200	8.3	12.1	24	12
20...	1245	465	195	6.9	11.4	25	7
NOV							
11...	1245	641	155	6.8	10.7	18	21
17...	1200	835	167	7.0	5.1	22	14
DEC							
08...	1420	931	155	8.1	3.2	30	18
JAN							
05...	1730	660	190	7.4	1.4	30	18
20...	1335	520	205	7.9	3.3	19	18
FEB							
02...	1515	515	165	7.5	1.2	35	18
23...	1445	546	150	7.0	3.5	6	1
MAR							
08...	1330	510	190	6.7	2.2	31	2
22...	1115	692	180	7.0	5.2	20	2
APR							
12...	1510	5850	100	7.0	7.2	30	8
26...	1145	5000	105	7.3	6.9	16	9
MAY							
10...	1200	21700	58	6.8	7.3	20	15
24...	1130	15400	43	7.5	8.3	23	2
JUN							
07...	1445	8000	74	7.2	14.0	18	2
22...	1345	11600	42	7.0	11.1	11	6
JUL							
12...	1300	5270	65	7.2	15.1	8	3
26...	1315	1880	100	7.0	21.7	10	6
AUG							
09...	1400	2340	130	7.3	19.5	5	2
23...	1345	3560	70	7.1	18.8	5	3
SEP							
13...	1415	2330	90	6.8	16.0	6	3
27...	1325	1300	80	7.0	16.8	--	9

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
07...	9.5	200	11	.05	.13	.04	.01
20...	9.2	600	45	.03	.11	.02	.00
NOV							
11...	9.0	310	28	.06	.13	.02	.00
17...	9.2	455	45	.08	.06	.01	.00
DEC							
08...	9.1	225	35	.09	.05	.01	.00
JAN							
05...	9.3	310	21	.18	.04	.02	.00
20...	10.0	185	--	.17	.06	.01	.00
FEB							
02...	9.7	105	15	.12	.04	.01	.00
23...	11.1	76	11	.12	.01	.01	.00
MAR							
08...	10.3	300	20	.10	.06	.01	.00
22...	12.2	275	18	.15	.09	.02	.00
APR							
12...	9.9	85	10	.05	.08	.05	.00
26...	10.0	160	11	.06	.06	.02	.00
MAY							
10...	10.6	85	6	.03	.47	.07	.00
24...	7.8	315	37	.02	.09	.02	.01
JUN							
07...	9.6	95	18	.02	.10	.01	.00
22...	10.7	100	14	.02	.04	.02	.00
JUL							
12...	12.4	85	10	.03	.06	.01	.00
26...	10.0	75	<10	.02	.15	.04	.00
AUG							
09...	10.0	30	<10	.03	.11	.01	.00
23...	8.7	70	<10	.01	.05	.01	.01
SEP							
13...	10.0	60	<10	.24	.10	.01	.00
27...	13.7	60	<10	.02	.16	.02	.00

12406000 DEER LAKE NEAR LOON LAKE, WA

LOCATION.--Lat 48°06'28", long 117°36'06", in SW¼SW¼ sec.11, T.30 N., R.41 E., Stevens County, Hydrologic Unit 17020003, 0.2 mi (0.3 km) upstream from outlet at Stymans' Resort, and 3.4 mi (5.5 km) northeast of the town of Loon Lake.

DRAINAGE AREA.--18.2 mi² (47.1 km²).

PERIOD OF RECORD.--November 1952 to November 1968 (fragmentary), December 1968 to current year, chemical analyses October 1971 to September 1972.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,473.9 ft (754.04 m) above mean sea level, unadjusted. Prior to Oct. 1, 1953, nonrecording gage 150 ft (46 m) down lake at datum 4.00 ft (1.219 m) higher, and Oct. 1, 1953, to Nov. 13, 1968, nonrecording gage 300 ft (91 m) down lake at present datum.

REMARKS.--Intermediate stages of lake controlled by county road fill and two corrugated metal pipe culverts. Some pumping for domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 9.30 ft (2.835 m) Apr. 25, 26, 1956; minimum observed, 3.05 ft (0.930 m) Jan. 8, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 7.56 ft (2.304 m) Apr. 24, 25, 26, 27; minimum recorded, 5.90 ft (1.798 m) Sept. 27, but may have been lower during period of no gage-height record.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	6.24	6.40	6.60	6.61	7.50	7.16	6.81	6.50	6.33
2			---	6.24	6.40	6.60	6.61	7.51	7.15	6.82	6.51	6.31
3			---	6.24	6.41	6.60	6.62	7.52	7.14	6.82	6.51	6.29
4			---	6.29	6.41	6.60	6.63	7.51	7.12	6.82	6.50	6.28
5			---	6.28	6.41	6.60	6.65	7.51	7.11	6.82	6.49	6.27
6			---	6.28	6.41	6.60	6.94	7.50	7.09	6.80	6.50	6.25
7			---	6.29	6.41	6.60	7.19	7.50	7.09	6.79	6.54	6.23
8			---	6.30	6.40	6.60	7.26	7.48	---	6.80	6.53	6.21
9			---	6.31	6.39	6.60	7.31	7.44	---	6.79	6.51	6.19
10			---	6.32	6.39	6.60	7.34	7.44	---	6.78	6.50	6.17
11			---	6.34	6.39	6.60	7.37	7.44	---	---	6.49	6.16
12			---	6.34	6.40	6.60	7.39	7.43	---	---	6.48	6.15
13			---	6.34	6.41	6.60	7.42	7.41	---	---	6.47	6.13
14			---	6.38	6.41	6.60	7.44	7.38	---	---	6.48	6.12
15			---	6.39	6.41	6.60	7.49	7.39	---	6.74	6.47	6.10
16			6.31	6.39	6.46	6.60	7.50	7.38	---	6.73	6.47	6.09
17			6.28	6.40	6.46	6.60	7.50	7.35	---	6.71	6.44	6.08
18			6.25	6.38	6.47	6.60	7.50	7.33	---	6.69	6.43	6.08
19			6.22	6.37	6.48	6.60	7.51	7.31	---	6.67	6.41	6.06
20			6.19	6.42	6.48	6.59	7.53	7.33	---	6.67	6.41	6.01
21			6.15	6.42	6.48	6.59	7.54	7.33	---	6.66	6.39	5.97
22			6.15	6.42	6.48	6.59	7.54	7.32	---	6.65	6.38	5.96
23			6.16	6.42	6.49	6.59	7.54	7.30	---	6.64	6.38	5.97
24			6.19	6.42	6.48	6.59	7.55	7.28	---	6.61	6.37	5.96
25			6.20	6.42	6.49	6.59	7.56	7.27	---	6.58	6.40	5.96
26			6.26	6.42	6.51	6.59	7.55	7.26	---	6.54	6.40	5.94
27			6.29	6.42	6.56	6.60	7.55	7.25	---	6.50	6.38	5.92
28			6.30	6.41	6.59	6.60	7.54	7.22	---	6.51	6.36	5.92
29			6.31	6.39	6.59	6.60	7.52	7.18	6.82	6.52	6.36	5.92
30			6.32	6.38	---	6.60	7.51	7.17	6.82	6.50	6.35	5.92
31			6.29	6.38	---	6.60	---	7.17	---	6.50	6.34	---
MEAN	---		---	6.36	6.45	6.60	7.31	7.37	---	---	6.44	6.10
MAX	---		---	6.42	6.59	6.60	7.56	7.52	---	---	6.54	6.33
MIN	---		---	6.24	6.39	6.59	6.61	7.17	---	---	6.34	5.92

12406500 LOON LAKE NEAR LOON LAKE, WA

LOCATION.--Lat 48°01'42", long 117°36'14" in SW¼NW¼ sec.11, T.29 N., R.41 E., Stevens County, Hydrologic Unit 17020003, at south end of Loon Lake, 2.7 mi (4.3 km) southeast of town of Loon Lake.

DRAINAGE AREA.--14.1 mi² (36.5 km²).

PERIOD OF RECORD.--April 1950 to current year, chemical analyses October 1970 to September 1971.

REVISED RECORDS.--WSP 1216: 1950. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, unadjusted; 0.94 ft (0.287 m) above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 29, 1951, water-stage recorder at site 0.2 mi (0.3 km) north at same datum.

REMARKS.--Elevation controlled by dam at lake outlet. Some pumping for domestic use and irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,382.71 ft (726.250 m) May 3, 1950, but may have been higher sometime in 1951 water year while water-stage recorder was not operating; minimum, 2,378.62 ft (725.003 m) Oct. 18, 19, 20, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum recorded elevation, 2,381.33 ft (725.829 m) Apr. 20, 21, 22; minimum, 2,379.99 ft (725.421 m) Sept. 30.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2380.20	2380.20	2380.29	2380.46	2380.81	---	2381.18	2381.13	2380.88	2380.70	2380.37	2380.29
2	2380.19	2380.20	2380.29	2380.51	2380.82	---	2381.15	2381.12	2380.87	2380.70	2380.38	2380.28
3	2380.19	2380.20	2380.30	2380.52	2380.81	---	2381.13	2381.13	2380.87	2380.69	2380.40	2380.26
4	2380.20	2380.20	2380.32	2380.57	2380.81	---	2381.11	2381.15	2380.85	2380.68	2380.40	2380.25
5	2380.19	2380.20	2380.33	2380.60	2380.81	---	2381.11	2381.15	2380.85	2380.67	2380.39	2380.23
6	2380.20	2380.20	2380.36	2380.61	2380.81	---	2381.13	2381.16	2380.84	2380.67	2380.40	2380.23
7	2380.19	2380.22	2380.40	2380.62	2380.80	---	2381.15	2381.16	2380.83	2380.66	2380.45	2380.21
8	2380.18	2380.21	2380.40	2380.63	2380.80	2381.17	2381.16	2381.13	2380.85	2380.66	2380.44	2380.20
9	2380.17	2380.21	2380.41	2380.62	2380.82	2381.15	2381.18	2381.13	2380.86	2380.65	2380.43	2380.18
10	2380.17	2380.21	2380.41	2380.63	2380.84	2381.13	2381.19	2381.13	2380.86	2380.63	2380.42	2380.17
11	2380.17	2380.20	2380.42	2380.65	2380.85	2381.14	2381.18	2381.14	2380.85	2380.63	2380.42	2380.16
12	2380.16	2380.20	2380.41	2380.66	2380.87	2381.16	2381.18	2381.12	2380.83	2380.63	2380.40	2380.15
13	2380.16	2380.19	2380.41	2380.66	2380.91	2381.16	2381.21	2381.11	2380.82	2380.62	2380.39	2380.13
14	2380.15	2380.19	2380.41	2380.68	2380.95	2381.18	2381.24	2380.99	2380.80	2380.61	2380.40	2380.13
15	2380.14	2380.22	2380.41	2380.71	2380.95	2381.17	2381.29	2380.97	2380.80	2380.60	2380.39	2380.11
16	2380.14	2380.22	2380.40	2380.72	2380.95	2381.18	2381.30	2380.97	2380.82	2380.59	2380.39	2380.10
17	2380.13	2380.22	2380.39	2380.75	2381.00	2381.20	2381.30	2380.95	2380.83	2380.58	2380.37	2380.09
18	2380.12	2380.22	2380.39	2380.77	2381.09	2381.20	2381.29	2380.95	2380.82	2380.56	2380.36	2380.09
19	2380.12	2380.21	2380.37	2380.78	2381.14	2381.18	2381.31	2380.94	2380.81	2380.54	2380.35	2380.08
20	2380.10	2380.21	2380.34	2380.78	2381.15	2381.15	2381.33	2380.94	2380.80	2380.54	2380.35	2380.07
21	2380.11	2380.20	2380.32	2380.78	2381.15	2381.12	2381.32	2380.94	2380.80	2380.52	2380.34	2380.06
22	2380.11	2380.20	2380.30	2380.78	2381.15	2381.08	2381.31	2380.94	2380.82	2380.51	2380.34	2380.05
23	2380.10	2380.22	2380.31	2380.78	---	2381.17	2381.30	2380.94	2380.83	2380.50	2380.33	2380.05
24	2380.08	2380.24	2380.33	2380.79	---	2381.26	2381.24	2380.93	2380.82	2380.48	2380.33	2380.04
25	2380.13	2380.23	2380.34	2380.79	---	2381.21	2381.16	2380.92	2380.79	2380.47	2380.35	2380.04
26	2380.17	2380.26	2380.39	2380.79	---	2381.07	2381.14	2380.91	2380.78	2380.47	2380.35	2380.03
27	2380.18	2380.26	2380.42	2380.79	---	2381.09	2381.13	2380.90	2380.77	2380.44	2380.33	2380.03
28	2380.20	2380.26	2380.44	2380.79	---	2381.14	2381.13	2380.90	2380.76	2380.42	2380.32	2380.02
29	2380.20	2380.26	2380.46	2380.80	---	2381.16	2381.13	2380.88	2380.74	2380.40	2380.32	2380.01
30	2380.21	2380.27	2380.45	2380.80	---	2381.16	2381.13	2380.88	2380.72	2380.39	2380.31	2380.00
31	2380.21	---	2380.45	2380.81	---	2381.17	---	2380.88	---	2380.38	2380.30	---
MEAN	2380.16	2380.22	2380.38	2380.70	---	---	2381.20	2381.02	2380.82	2380.57	2380.37	2380.12
MAX	2380.21	2380.27	2380.46	2380.81	---	---	2381.33	2381.16	2380.88	2380.70	2380.45	2380.29
MIN	2380.08	2380.19	2380.29	2380.46	---	---	2381.11	2380.88	2380.72	2380.38	2380.30	2380.00

CAL YR 1975 MEAN 2380.63 MAX 2381.66 MIN 2380.08

12407680 COLVILLE RIVER AT CHEWELAH, WA

LOCATION.--Lat 48°15'38", long 117°42'52", in SE¼NE¼ sec.23, T.32 N., R.40 E., Stevens County, Hydrologic Unit 17020003, at U.S. Highway 395 bridge, 0.7 mi (1.1 km) south of Chewelah city limits.

DRAINAGE AREA.--295 mi² (764 km²).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
07...	1115	78	340	7.8	10.8	43	27
20...	1415	74	315	7.9	10.0	40	8
NOV							
11...	0800	74	375	7.8	9.8	45	7
17...	1000	89	340	7.6	4.6	30	15
DEC							
08...	1215	89	325	7.8	5.0	45	15
15...	1015	73	340	7.3	3.6	30	8
JAN							
05...	1400	84	275	7.1	1.3	37	15
20...	1030	79	220	7.5	2.1	30	17
FEB							
02...	1120	82	350	7.4	1.3	30	18
23...	1300	97	385	7.2	4.2	30	2
MAR							
08...	1130	96	380	6.3	3.6	29	28
22...	0930	203	325	6.6	2.9	21	50
APR							
12...	1130	262	210	6.9	8.4	45	20
26...	1000	195	275	6.6	6.6	41	20
MAY							
10...	0915	201	350	7.0	10.7	60	35
24...	0930	112	270	7.2	13.5	25	10
JUN							
07...	1130	84	250	6.6	18.4	50	3
22...	1200	62	300	7.2	13.1	47	7
JUL							
12...	1100	45	300	6.9	17.3	42	6
26...	1115	17	315	7.3	23.4	21	5
AUG							
09...	1200	41	305	6.4	17.7	23	5
23...	1145	39	325	6.3	19.3	20	5
SEP							
13...	1245	42	320	6.8	14.8	18	5
27...	1145	40	310	6.9	14.7	18	5

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
07...	10.1	800	59	.23	.19	.06	.02
20...	8.8	400	34	.32	.13	.05	.01
NOV							
11...	9.4	425	44	.30	.10	.03	.00
17...	8.1	405	45	.35	.22	.05	.01
DEC							
08...	10.4	510	37	.41	.15	.06	.02
15...	11.1	275	20	.44	.07	.07	.01
JAN							
05...	10.3	300	24	.40	.12	.05	.01
20...	11.0	310	--	.41	.14	.06	.01
FEB							
02...	10.8	320	25	.38	.11	.06	.01
23...	10.1	110	23	.56	.12	.07	.01
MAR							
08...	12.6	285	42	.48	.17	.09	.01
22...	9.3	220	37	.60	.28	.25	.02
APR							
12...	10.0	275	24	.16	.20	.08	.01
26...	9.0	270	26	.19	.18	.06	.01
MAY							
10...	11.1	187	21	.14	.14	.10	.01
24...	9.2	275	19	.14	.10	.04	.01
JUN							
07...	8.3	235	22	.09	.14	.03	.01
22...	9.9	175	18	.11	.08	.03	.00
JUL							
12...	10.0	170	13	.09	.17	.05	.01
26...	9.9	140	22	.09	.20	.04	.01
AUG							
09...	8.5	170	15	.14	.16	.05	.01
23...	6.9	155	<10	.07	.04	.02	.00
SEP							
13...	8.0	130	<10	.05	.12	.03	.01
27...	10.0	105	15	.08	.08	.03	.01

12408000 COLVILLE RIVER AT BLUE CREEK, WA

LOCATION.--Lat 48°19'13", long 117°49'07", in NW¼NW¼ sec.31, T.33 N., R.40 E., Stevens County, Hydrologic Unit 17020003, upstream from county road bridge, just downstream from mouth of Blue Creek, 5.5 mi (8.8 km) northwest of Chewelah.

DRAINAGE AREA.--428 mi² (1,109 km²).

PERIOD OF RECORD.--Water years 1960-72, October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
07...	1150	111	320	7.6	10.6	38	16
20...	1330	99	305	7.6	10.0	51	10
NOV							
11...	0910	102	300	7.6	9.2	51	11
17...	1030	147	325	7.6	4.4	48	11
DEC							
08...	1300	126	320	7.9	4.9	40	10
15...	1045	100	350	7.3	3.0	36	7
JAN							
05...	1545	99	295	7.3	4.0	36	12
20...	1140	136	200	7.6	2.3	35	12
FEB							
02...	1230	111	340	7.2	3.5	30	16
23...	1330	141	340	7.6	3.7	32	3
MAR							
08...	1200	140	380	7.1	3.6	28	24
22...	0945	276	310	6.8	3.8	37	41
APR							
12...	1300	445	205	6.9	8.7	48	25
26...	1030	460	250	6.8	8.6	49	20
MAY							
10...	0945	331	290	6.9	10.8	50	25
24...	1010	210	225	7.6	14.3	20	7
JUN							
07...	1205	141	190	6.9	16.2	50	10
22...	1220	113	260	6.9	13.4	49	9
JUL							
12...	1130	49	295	6.9	17.5	50	9
26...	1150	11	305	7.1	22.2	20	9
AUG							
09...	1230	53	255	6.9	18.7	16	12
23...	1220	45	315	7.3	19.8	13	9
SEP							
13...	1310	45	300	6.9	16.4	11	4
27...	1200	47	290	6.9	16.5	19	8

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
07...	11.6	520	51	.18	.24	.08	.04
20...	9.0	522	47	.29	.14	.07	.02
NOV							
11...	9.7	370	51	.28	.09	.08	.02
17...	8.9	400	37	.36	.18	.07	.03
DEC							
08...	9.3	290	20	.44	.21	.08	.04
15...	10.5	270	26	.47	.10	.09	.04
JAN							
05...	10.9	270	15	.41	.14	.11	.04
20...	9.3	225	--	.42	.20	.10	.04
FEB							
02...	10.0	275	20	.45	.12	.09	.02
23...	10.0	240	18	.64	.19	.12	.02
MAR							
08...	12.1	280	41	.55	.24	.14	.03
22...	10.1	205	28	.80	.30	.30	.07
APR							
12...	10.3	290	6	.18	.29	.14	.02
26...	8.2	210	30	.18	.20	.08	.01
MAY							
10...	11.0	205	19	.15	.12	.10	.01
24...	10.0	240	26	.17	.10	.07	.01
JUN							
07...	8.7	210	16	.14	.14	.07	.02
22...	10.3	180	10	.15	.15	.06	.01
JUL							
12...	10.0	195	23	.13	.14	.07	.04
26...	9.3	210	14	.14	.20	.09	.03
AUG							
09...	8.5	170	<10	.21	.18	.09	.03
23...	7.3	190	<10	.13	.08	.07	.01
SEP							
13...	9.3	170	21	.07	.14	.05	.02
27...	8.8	118	<10	.11	.14	.07	.02

12409000 COLVILLE RIVER AT KETTLE FALLS, WA

LOCATION.--Lat 48°35'40", long 118°03'41", in NE¼NE¼ sec.30, T.36 N., R.38 E., Stevens County, Hydrologic Unit 17020003, on right bank 600 ft (180 m) downstream from Washington Water Power Co.'s hydroelectric plant at foot of Meyers Falls, 1.0 mi (1.6 km) south of town of Kettle Falls, and at mile 5.0 (8.0 km).

DRAINAGE AREA.--1,007 mi² (2,608 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1922 to current year. Published as "as Meyers Falls" 1922-38.

REVISED RECORDS.--WSP 1316: 1938(M), 1941(M), 1948(M). WSP 1636: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft (427 m), from topographic map. Prior to Oct. 21, 1932, nonrecording gage at site 500 ft (150 m) upstream at different datum. Oct. 21, 1932, to Sept. 19, 1938, nonrecording gages at site 200 ft (60 m) upstream at different datum. Sept. 20, 1938, to Mar. 20, 1949, nonrecording gage at present site and datum.

REMARKS.--Records excellent. Several ditches above station divert water for irrigation. Regulation at low flow by powerplant.

AVERAGE DISCHARGE.--54 years, 308 ft³/s (8.723 m³/s), 223,100 acre-ft/yr (275 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,440 ft³/s (97.4 m³/s) Jan. 21, 1974, gage height, 9.84 ft (2.999 m); maximum gage height, 10.17 ft (3.100 m) Apr. 23, 1956; minimum discharge observed, 0.5 ft³/s (0.014 m³/s) Aug. 15, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 860 ft³/s (24.4 m³/s) May 6, 7, gage height, 6.90 ft (2.103 m); minimum, 11 ft³/s (0.31 m³/s) Aug. 6, gage height, 4.86 ft (1.481 m) result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	243	183	269	214	273	508	681	455	187	87	140
2	150	222	240	230	217	246	507	716	437	201	103	125
3	150	211	329	249	220	220	492	794	417	199	168	123
4	150	209	417	231	185	200	490	836	399	187	187	121
5	152	207	365	260	100	140	511	845	388	182	170	118
6	158	204	296	264	123	246	541	857	374	172	147	114
7	166	213	265	240	177	264	559	844	356	157	177	116
8	169	223	261	234	195	253	601	832	347	166	201	118
9	169	216	253	233	211	269	661	829	365	163	179	119
10	169	208	256	231	208	313	728	822	356	159	165	119
11	170	219	253	232	214	354	759	828	335	147	156	119
12	173	204	234	232	230	338	795	838	319	157	138	119
13	169	202	209	209	284	309	803	787	308	165	130	119
14	165	197	148	211	286	314	798	732	298	162	130	119
15	166	215	183	240	300	326	803	677	288	145	148	116
16	168	267	172	251	324	329	823	632	306	132	170	113
17	170	269	182	252	382	351	795	593	319	124	173	103
18	167	232	238	265	347	410	766	551	298	116	164	108
19	165	201	181	264	324	447	732	526	277	109	150	106
20	163	193	184	235	297	436	710	529	262	107	149	113
21	163	180	198	211	277	401	741	553	251	106	161	101
22	167	196	172	215	264	380	735	531	263	103	150	108
23	169	202	196	240	264	416	707	475	285	101	135	108
24	169	208	197	242	331	462	684	477	283	92	133	108
25	172	215	202	229	381	511	684	484	261	90	154	113
26	190	216	229	217	425	533	685	471	247	75	196	103
27	200	215	366	223	410	530	685	440	235	48	216	106
28	209	191	346	228	358	501	685	426	220	62	185	108
29	224	124	284	227	306	459	679	416	205	70	169	103
30	233	137	308	226	---	441	673	407	193	89	160	103
31	247	---	345	222	---	468	---	434	---	85	143	---
TOTAL	5407	6239	7692	7312	7854	11180	20340	19863	9347	4058	4894	3409
MEAN	174	208	248	236	271	361	678	641	312	131	158	114
MAX	247	269	417	269	425	533	823	857	455	201	216	140
MIN	150	124	148	209	100	180	490	407	193	48	87	101
AC-FT	10720	12380	15260	14500	15580	22180	40340	39400	18540	8050	9710	6760

CAL YR 1975 TOTAL 161636 MEAN 443 MAX 2230 MIN 117 AC-FT 320600
WTR YR 1976 TOTAL 107595 MEAN 294 MAX 857 MIN 48 AC-FT 213400

12409000 COLVILLE RIVER AT KETTLE FALLS, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-72, 1974 to September 1976 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: November 1969 to June 1971.

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
07...	1315	166	325	8.1	11.5	17	39
20...	1130	163	350	8.2	11.2	27	46
NOV							
11...	1015	193	365	8.0	10.0	20	40
17...	1120	275	315	7.9	5.0	21	46
DEC							
08...	1345	263	325	8.0	4.3	8	22
15...	1130	172	375	7.6	3.0	19	24
FEB							
02...	1400	215	360	6.8	3.2	15	24
23...	1415	254	400	7.3	4.5	21	6
MAR							
08...	1245	250	320	7.3	2.3	20	16
22...	1045	383	375	6.9	2.8	44	26
APR							
12...	1405	796	210	6.7	8.4	27	30
26...	1115	686	250	7.0	8.1	20	25
MAY							
10...	1130	820	170	7.1	11.7	44	25
24...	1045	476	220	7.3	13.6	20	10
JUN							
07...	1350	356	200	6.8	16.8	48	6
22...	1300	263	260	6.9	14.8	48	10
JUL							
12...	1215	163	290	6.8	17.8	50	5
26...	1230	83	305	7.1	21.9	35	9
AUG							
09...	1315	176	300	6.9	18.4	19	11
23...	1310	135	300	6.8	20.6	31	8
SEP							
13...	1345	119	320	6.8	16.7	13	4
27...	1250	103	325	7.2	16.4	31	6

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
07...	8.6	310	22	.11	.21	.06	.03
20...	11.5	850	95	.22	.11	.07	.02
NOV							
11...	10.3	280	35	.24	.15	.08	.04
17...	9.0	980	77	.32	.13	.11	.05
DEC							
08...	10.0	300	40	.44	.13	.11	.06
15...	8.9	320	47	.47	.18	.11	.06
FEB							
02...	8.1	160	25	.50	.13	.09	.03
23...	12.0	188	26	.64	.23	.16	.04
MAR							
08...	10.0	290	23	.58	.26	.14	.04
22...	11.0	240	30	.60	.21	.18	.05
APR							
12...	10.9	115	18	.19	.12	.18	.02
26...	9.6	110	16	.58	.16	.12	.02
MAY							
10...	12.0	89	14	.12	.11	.12	.01
24...	10.1	310	51	.18	.08	.08	.02
JUN							
07...	9.0	115	35	.12	.08	.06	.01
22...	9.4	120	15	.10	.11	.06	.01
JUL							
12...	9.7	110	14	.12	.22	.07	.03
26...	9.4	135	15	.17	.18	.09	.03
AUG							
09...	8.3	100	18	.21	.21	.12	.03
23...	7.3	130	15	.13	.08	.10	.05
SEP							
13...	9.4	110	<10	.01	.08	.16	.03
27...	9.4	100	<10	.06	.09	.08	.02

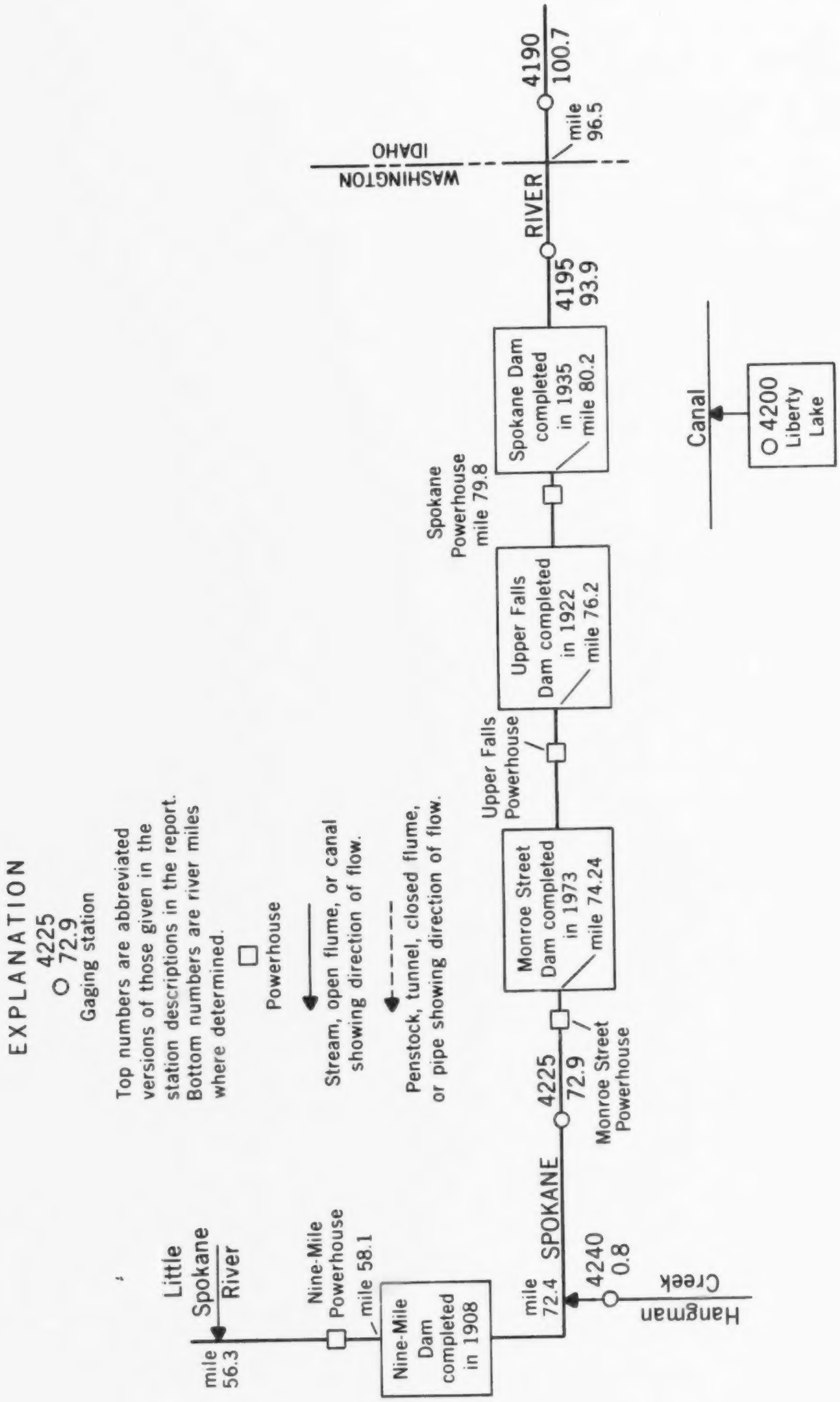
EXPLANATION
4225
72.9
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
Little Spokane River
mile 56.3
Nine-Mile Powerhouse mile 58.1
Nine-Mile Dam completed in 1908
mile 72.4
SPOKANE
4240
0.8
Hangman Creek
4225
72.9
Monroe Street Powerhouse
Monroe Street Dam completed in 1973 mile 74.24
Upper Falls Powerhouse
Upper Falls Dam completed in 1922 mile 76.2
Spokane Powerhouse mile 79.8
Spokane Dam completed in 1935 mile 80.2
4195
93.9
RIVER
WASHINGTON
IDAHO
mile 96.5
4190
100.7
Canal
4200 Liberty Lake

Figure 7. Gaging stations in Spokane River basin above Little Spokane River.

12419000 SPOKANE RIVER NEAR POST FALLS, IDAHO

LOCATION.--Lat 47°42'10", long 116°58'40", in SW¼SW¼ sec.4, T.50 N., R.5 W., Kootenai County, Hydrologic Unit 17010305, on right bank 1 mi (1.6 km) downstream from powerplant of Washington Water Power Co., 1.5 mi (2.4 km) southwest of Post Falls, and at mile 100.7 (162.0 km).

DRAINAGE AREA.--3,840 mi² (9,946 km²), approximately, of which about 122 mi² (316 km²) in the vicinity of Hayden Lake is noncontributing to this station.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1912 to current year (prior to January 1913 monthly discharge only, published in WSP 870 and 1736). Prior to October 1949, published as "at Post Falls".

GAGE.--Water-stage recorder. Datum of gage is 2,050 ft (624.8 m) above mean sea level, referenced to same datum as gage on Coeur d'Alene Lake at Coeur d'Alene (see sta 12415500). Datum of gage is 2,053 ft (625.8 m) above mean sea level. Jan. 1, 1913, to Nov. 21, 1920, nonrecording gage and Nov. 22, 1920, to Sept. 30, 1964, water-stage recorder at present site or 0.6 (1.0 km) or 0.8 mi (1.3 km) upstream at datum 50 ft (15.2 m) lower than present datum.

REMARKS.--Records excellent. Rathdrum Prairie Canal (see sta 12418000) diverts water above gage for irrigation. Figures of daily discharge do not include water diverted by this canal. Flow regulated by dam at Post Falls and affected by storage in Coeur d'Alene Lake (see sta 12415500).

AVERAGE DISCHARGE.--River only, 64 years, 6,366 ft³/s (180 m³/s), 4,612,000 acre-ft/yr (5,687 hm³/yr); combined river and diversions above gage, 64 years, 6,458 ft³/s (183 m³/s), 4,679,000 acre-ft/yr (5,769 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,100 ft³/s (1,419 m³/s) when recorder was not operating Dec. 25, 1933 (determined from unpublished records collected by Washington Water Power Co. for station at Liberty Bridge); minimum, 65 ft³/s (1.84 m³/s) July 25, 30, 1973; minimum gage height, 4.76 ft (1.951 m) Sept. 18, 19, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,200 ft³/s (884 m³/s) May 13, gage height, 21.39 ft (6.520 m); minimum, 664 ft³/s (18.80 m³/s) July 20, gage height, 6.15 ft (1.874 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DFC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2120	3360	3130	8420	6730	6810	7650	16900	18000	5630	1430	1460
2	2100	3360	3550	6750	6700	6780	7790	17600	17400	4340	1280	1460
3	2130	3360	3800	5730	6640	6420	7890	18500	16500	3840	1580	1480
4	2120	3370	5440	5760	6590	6140	8020	19400	15700	3850	1940	1470
5	2130	3370	11500	6340	6530	6020	8230	20200	14900	3890	1950	1470
6	2150	3360	16300	6700	6040	5670	9530	21000	14200	3660	1850	1470
7	2130	3390	17600	6650	5670	5640	10500	21600	13300	3800	1770	1470
8	2120	3450	17800	6650	5650	5610	11500	22200	13000	4130	1770	1460
9	2130	3450	17600	6640	5640	5660	13400	23200	12500	4250	1760	1470
10	2140	3440	17200	6600	5320	5740	15500	24800	12300	4260	1750	1470
11	2140	3440	16600	6590	5550	5650	17500	26600	12200	3830	1580	1460
12	2130	3440	16000	6540	6730	5620	19000	28700	12100	3130	1470	1460
13	2220	3440	14100	5960	7260	5490	20700	30100	11800	2770	1320	1460
14	2270	3440	12600	5640	7820	5460	22100	30200	8190	2770	1270	1460
15	2280	3460	8560	6780	8110	5320	23200	30100	3180	2290	1240	1550
16	2270	3440	6620	10200	8140	5220	23700	29800	3280	2020	1510	1870
17	2270	3250	6860	13000	8160	5220	23500	29400	3520	2030	1730	1880
18	2280	2850	6840	14800	8210	5470	23000	28500	4500	2020	1740	1870
19	2290	3030	6200	14400	8070	6310	22100	27700	5070	2000	1740	1870
20	2290	3460	5790	13800	7990	6690	21200	27200	5460	1830	1740	1880
21	2310	3580	5760	13700	7360	6750	20500	26000	6930	1790	1730	1880
22	2300	3900	5760	13400	7020	6780	19800	24900	8130	1780	1740	1880
23	2310	4040	5650	13000	6510	6860	19200	24100	8370	1760	1610	1890
24	2310	4080	5760	12300	6270	6920	18600	23200	7230	1780	1470	1910
25	2320	3730	5740	10900	6340	7440	18000	22600	5400	1790	1470	1900
26	2320	3440	6950	8590	6440	7840	17600	21900	4370	1770	1470	1890
27	2320	3430	8630	7150	6710	7820	17300	21100	4200	1650	1460	1910
28	2520	3460	8380	6840	6930	7770	17000	20500	4620	1280	1310	1900
29	2720	3660	7750	6830	6900	7720	16700	19800	4680	1280	1230	1900
30	2740	4180	8190	6790	---	7590	16600	19200	5540	1270	1240	1910
31	2920	---	8430	6760	---	7550	---	18600	---	1430	1280	---
TOTAL	70800	104660	291090	270210	198030	197980	497310	735600	276570	83920	48430	50410
MEAN	2284	3489	9390	8716	6829	6386	16580	23730	9219	2707	1562	1680
MAX	2920	4180	17800	14800	8210	7840	23700	30200	18000	5630	1950	1910
MIN	2100	2850	3130	5640	5320	5220	7650	16900	3180	1270	1230	1460
AC-FT	140400	207600	577400	536000	392800	392700	986400	1459000	548600	166500	96060	99990
MEAN†	2,287	3,488	9,390	8,716	6,828	6,386	16,577	23,750	9,258	2,762	1,597	1,702
AC-FT‡	140,600	207,600	577,400	536,000	392,800	392,700	986,400	1,460M	550,900	169,800	98,220	101,300

```
CAL YR 1975:  TOTAL  2,530,667   MEAN  6,933   MAX  30,800   MIN    859   AC-FT  5,020,000
     DO.....:  MEAN‡       6,949   AC-FT‡  5,031,000
WTR YR 1976:  TOTAL  2,825,010   MEAN  7,719   MAX  30,200   MIN  1,230   AC-FT  5,603,000
     DO.....:  MEAN‡       7,733   AC-FT‡  5,614,000
```

M Thousands
‡ Adjusted for diversion through Rathdrum Prairie Canal.

12419000 SPOKANE RIVER NEAR POST FALLS, ID--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected 0.2 mi (0.3 km) upstream from gage.

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)
OCT 22...	1130	2250	57	7.1	6.5	10.5	1	10.0	96	8	B2	--
NOV 10...	1115	3470	57	6.9	1.5	8.5	0	10.6	97	3	B1	31
DEC 08...	1045	17400	54	6.8	4.5	6.0	1	13.0	113	2	B1	--
JAN 19...	1000	15700	65	6.7	-.5	3.0	3	13.9	112	8	B3	--
FEB 23...	1100	5890	62	7.0	9.5	3.5	6	13.6	110	1	<1	25
MAR 22...	1130	6840	57	6.8	8.5	3.5	4	13.8	112	9	B1	--
APR 26...	1230	17000	57	6.4	10.0	6.0	4	12.3	105	10	B2	--
MAY 17...	1045	28700	45	7.2	9.0	11.0	35	11.8	114	5	B2	21
JUN 14...	1130	11800	43	7.3	18.5	14.0	1	12.1	125	<10	<1	--
JUL 12...	1030	2940	42	7.4	18.5	19.5	1	8.7	101	4	B1	--
AUG 09...	1100	1790	45	7.2	22.0	21.5	2	8.2	99	39	B16	20
SEP 13...	1035	1470	47	7.3	14.0	18.0	3	9.5	108	2	B1	--

B Results based upon colony counts outside the ideal range.

DATE	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT 22...	--	--	--	--	--	--	--	20	0	16	--	--
NOV 10...	15	9.8	1.5	1.2	8	.1	.7	20	0	16	8.5	.3
DEC 08...	--	--	--	--	--	--	--	20	0	16	--	--
JAN 19...	--	--	--	--	--	--	--	12	0	10	--	--
FEB 23...	13	7.5	1.6	1.6	12	.1	1.1	15	0	12	11	5.8
MAR 22...	--	--	--	--	--	--	--	12	0	10	--	--
APR 26...	--	--	--	--	--	--	--	17	0	14	--	--
MAY 17...	2	5.6	1.6	1.3	12	.1	.7	23	0	19	9.2	.7
JUN 14...	--	--	--	--	--	--	--	29	0	24	--	--
JUL 12...	--	--	--	--	--	--	--	27	0	22	--	--
AUG 09...	7	5.7	1.3	1.3	12	.1	.6	16	0	13	7.2	.6
SEP 13...	--	--	--	--	--	--	--	24	0	20	--	--

12419000 SPOKANE RIVER NEAR POST FALLS, ID--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT 22...	6.1	37	.05	225	.05	.03	.19	.22	.27	1.2	.02
NOV 10...	6.5	45	.06	422	.02	.02	.22	.24	.26	1.2	.00
DEC 08...	7.5	50	.07	2350	.09	.02	.13	.15	.24	1.1	.00
JAN 19...	7.0	50	.07	2120	.10	.02	.18	.20	.30	1.3	.01
FEB 23...	7.7	40	.05	636	.06	.02	.11	.13	.19	.84	.03
MAR 22...	7.9	44	.06	813	.00	.03	.04	.07	.07	.31	.02
APR 26...	7.7	48	.07	2200	.02	.01	.08	.09	.11	.49	.01
MAY 17...	9.1	45	.06	3490	.08	.01	.14	.15	.23	1.0	.03
JUN 14...	8.6	35	.05	1120	.00	.01	.09	.10	.10	.44	.02
JUL 12...	7.5	28	.04	222	.00	.00	.11	.11	.11	.49	.02
AUG 09...	7.3	29	.04	140	.01	.00	.10	.10	.11	.49	.01
SEP 13...	6.4	38	.05	151	.00	.00	.16	.16	.16	.71	.02

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	OIL AND GREASE (MG/L)
OCT 22...	13	0	100	0	0	<100	.2	0	130	3.2	0
NOV 10...	1	<10	20	<10	650	<100	1.5	0	180	5.5	0
DEC 08...	0	<10	0	20	240	250	.2	0	260	1.8	0
JAN 19...	1	<10	0	<10	170	<100	.2	--	250	1.4	1
FEB 23...	1	<10	0	10	270	<100	.0	1	280	1.9	1
MAR 22...	0	<10	0	10	170	<100	.0	0	560	1.9	0
APR 26...	1	<10	0	10	220	<100	.2	0	290	2.3	0
MAY 17...	0	<10	10	10	280	<100	1.5	0	180	3.3	0
JUN 14...	0	2	<10	0	80	13	<.5	0	140	1.0	0
JUL 12...	1	<10	0	10	60	<100	.2	0	130	1.7	0
AUG 09...	1	30	0	70	70	<100	.2	0	120	.6	0
SEP 13...	1	<10	0	100	20	<100	.3	0	120	1.6	0

12419500 SPOKANE RIVER ABOVE LIBERTY BRIDGE, NEAR OTIS ORCHARDS, WA

LOCATION.--Lat 47°40'56", long 117°05'05", in NW¼ sec.11, T.25 N., R.45 E., Spokane County, Hydrologic Unit 17010305, on left bank 1.2 mi (1.9 km) upstream from Liberty Bridge, 1.8 mi (2.9 km) southeast of Otis Orchards, 3.3 mi (5.3 km) northeast of Greenacres, and at mile 93.9 (151.1 km).

DRAINAGE AREA.--3,880 mi² (10,050 km²), approximately.

PERIOD OF RECORD.--January 1929 to December 1936, March 1937, August 1937 to August 1941, October 1941 to October 1942, February to May 1943, August 1943 to November 1946, February to July 1947, September 1947 to February 1948; May to November 1948, March to November 1949, and April to September 1950 (monthly discharge only); October 1950 to current year. Chemical analyses July 1959 to September 1971, water temperatures December 1963 to September 1965.

GAGE.--Water-stage recorder. Datum of gage is 2,000 ft (609.6 m) above mean sea level (levels by Washington Water Power Co.).

REMARKS.--Records excellent. Flow partly regulated by dam at Post Falls, Idaho, 8.2 mi (13.2 km) upstream and affected by storage in Coeur d'Alene Lake. Rathdrum Prairie Canal, 12.7 mi (20.4 km) upstream, diverts water for irrigation of about 3,000 acres (12 km²) above station.

AVERAGE DISCHARGE.--40 years (water years 1930-36, 1938-40, 1942, 1944-46, 1951-76), 6,258 ft³/s (177.2 m³/s), 4,534,000 acre-ft/yr (5,590 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,100 ft³/s (1,420 m³/s) Dec. 25, 1933, gage height, 22.24 ft (6.779 m); minimum observed, 59 ft³/s (1.67 m³/s) Sept. 19, 1973, gage height, 7.51 ft (2.289 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,900 ft³/s (847 m³/s) May 13, gage height, 18.84 ft (5.742 m); minimum discharge, 1,020 ft³/s (28.9 m³/s) July 20, gage height, 9.35 ft (2.850 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2030	3340	3210	8190	6610	6720	7560	16600	17700	5630	1290	1330
2	2020	3350	3360	6660	6570	6680	7680	17300	17000	4420	1140	1340
3	2050	3350	3740	5580	6530	6600	7790	18200	16200	3890	1410	1350
4	2040	3350	5200	5600	6480	6300	7920	19200	15400	3890	1840	1350
5	2030	3350	10600	6150	6420	6100	8120	20000	14600	3930	1860	1340
6	2070	3340	15600	6550	5970	5800	9370	20700	13900	3710	1780	1350
7	2040	3370	16900	6520	5550	5530	10300	21200	13000	3780	1680	1350
8	2030	3450	17200	6500	5540	5510	11000	21800	12600	4170	1680	1330
9	2040	3450	17200	6480	5530	5550	12800	22700	12200	4270	1670	1350
10	2050	3450	16800	6450	5310	5630	14800	24100	12000	4290	1650	1350
11	2050	3450	16100	6420	5400	5550	16500	25800	12000	3880	1490	1340
12	2050	3440	15600	6340	6560	5530	18200	27900	11900	3180	1350	1350
13	2130	3430	13800	5840	7140	5410	20000	29300	11600	2780	1210	1350
14	2210	3430	12300	5490	7620	5380	21600	29400	8540	2790	1120	1340
15	2210	3440	8580	6550	7930	5270	22700	29400	3250	2320	1090	1400
16	2210	3430	6520	9770	7960	5170	23200	29200	3360	1950	1340	1780
17	2210	3290	6730	12500	7980	5180	23000	28600	3570	1970	1620	1800
18	2220	2830	6720	14100	8020	5400	22500	27800	4480	1950	1640	1790
19	2240	2950	6120	14000	7910	6180	21700	27000	5080	1930	1650	1790
20	2240	3420	5630	13300	7820	6620	20800	26300	5390	1760	1650	1800
21	2260	3520	5620	13200	7280	6690	20200	25300	6800	1700	1640	1800
22	2240	3870	5610	12900	6910	6710	19600	24300	7990	1680	1640	1810
23	2260	4030	5510	12600	6500	6780	18900	23300	8310	1660	1530	1810
24	2260	4070	5600	11900	6140	6850	18300	22600	7230	1680	1350	1830
25	2280	3720	5580	10700	6220	7320	17800	22100	5530	1700	1360	1820
26	2280	3340	6680	8510	6320	7760	17300	21500	4450	1670	1350	1810
27	2290	3380	8310	7060	6560	7750	17000	20700	4280	1590	1340	1840
28	2460	3390	8210	6730	6820	7690	16800	20100	4620	1130	1190	1830
29	2700	3560	7550	6710	6810	7640	16400	19500	4710	1130	1070	1820
30	2720	4140	7940	6670	---	7490	16400	18900	5450	1120	1090	1830
31	2840	---	8210	6640	---	7460	---	18400	---	1300	1120	---
TOTAL	68760	103980	282730	262660	194410	196250	486240	719200	273140	82850	44840	47380
MEAN	2218	3466	9120	8473	6704	6331	16210	23200	9105	2673	1446	1579
MAX	2840	4140	17200	14100	8020	7760	23200	29400	17700	5630	1860	1840
MIN	2020	2830	3210	5490	5310	5170	7560	16600	3250	1120	1070	1330
AC-FT	136400	206200	560800	521000	385600	389300	964500	1427000	541800	164300	88940	93980

CAL YR 1975 TOTAL 2484512 MEAN 6807 MAX 29800 MIN 722 AC-FT 4928000
WTR YR 1976 TOTAL 2762440 MEAN 7548 MAX 29400 MIN 1070 AC-FT 5479000

12419800 NEWMAN LAKE NEAR NEWMAN LAKE, WA

LOCATION.--Lat 47°45'52", long 117°05'47", in NE¼SE¼ sec.10, T.26 N., R.45 E., Spokane County, Hydrologic Unit 17010305, on southwest shore 3.0 mi (4.8 km) northwest of town of Newman Lake.

DRAINAGE AREA.--28.6 mi^2 (74.1 km^2).

PERIOD OF RECORD.--September 1958 to March 1968 (fragmentary); April 1968 to January 1970; February 1970 to current year (fragmentary). Chemical analyses October 1970 to September 1971.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Nonrecording gage. Altitude of gage is 2,120 ft (646 m), from topographic map. Apr. 4, 1968 to Jan. 27, 1970, water-stage recorder at site 0.7 mi (1.1 km) northeast across lake at same datum.

REMARKS.--Lake elevation regulated by concrete headworks at outlet. Many small diversions for domestic use by pumping from lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.62 ft (3.542 m) Jan. 29, 1974; minimum observed, 7.20 ft (2.195 m) Nov. 4, 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.08 ft (3.377 m) May 22; minimum observed, 8.52 ft (2.597 m) Jan. 17.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	10.94	---	---	---
2	---	---	---	---	---	---	9.30	10.24	---	---	---	---
3	---	---	---	---	---	8.84	9.46	---	10.90	10.64	---	---
4	9.58	---	8.90	---	---	---	---	10.28	---	---	---	10.10
5	---	---	---	---	---	---	---	---	10.90	---	---	---
6	---	---	8.88	---	---	8.86	---	10.32	10.90	10.60	---	---
7	9.54	---	---	---	---	---	9.64	---	---	---	10.20	---
8	---	9.26	---	---	---	---	---	10.40	---	---	---	---
9	9.52	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	8.88	---	---	9.82	---	10.88	10.58	---	---
11	9.48	---	---	---	---	---	9.88	---	---	---	---	9.98
12	---	---	---	---	---	---	---	---	10.84	10.56	10.16	---
13	---	---	8.82	---	---	8.82	---	---	---	10.50	---	---
14	---	---	---	---	8.58	---	---	---	---	---	10.14	---
15	---	9.12	---	---	---	8.80	---	10.68	---	---	---	---
16	---	---	---	---	---	---	---	---	10.94	---	---	---
17	---	---	---	8.52	---	---	10.22	---	---	10.48	---	---
18	---	---	---	---	---	---	10.24	---	---	---	---	9.88
19	---	---	---	---	---	---	---	---	10.86	---	---	---
20	---	---	8.62	---	---	8.92	---	---	10.86	10.40	---	---
21	---	---	---	---	8.60	---	---	---	---	---	10.12	---
22	9.28	9.00	---	---	---	---	---	11.08	---	---	---	---
23	---	---	---	8.64	---	---	10.24	---	---	---	---	9.82
24	---	---	---	---	---	---	10.24	---	---	10.36	---	---
25	9.28	---	---	---	---	---	---	---	---	---	---	9.68
26	---	---	---	---	---	---	---	---	10.78	---	---	---
27	---	---	---	---	---	9.15	---	---	---	---	---	---
28	9.30	---	---	---	---	---	---	---	---	---	10.14	---
29	---	8.86	---	---	---	---	---	---	---	---	---	---
30	9.32	---	8.60	---	---	---	10.14	---	---	---	---	---
31	---	---	---	---	---	9.26	---	---	---	10.22	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---

12420000 LIBERTY LAKE AT LIBERTY LAKE, WA

LOCATION.--Lat 47°39'09", long 117°05'20", in NE¼ sec.22, T.25 N., R.45 E., Spokane County, Hydrologic Unit 17010305, on right wall of concrete outlet flume at town of Liberty Lake, 15 mi (24.1 km) east of Spokane.

DRAINAGE AREA.--13.3 mi² (34.4 km²).

PERIOD OF RECORD.--December 1950 to December 1955 (fragmentary), January 1956 to current year. Chemical analyses October 1970 to September 1971.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is at mean sea level. Prior to Oct. 1, 1958, published at datum 2,046.48 ft (623.767 m) higher.

REMARKS.--Stage controlled by gates at outlet. Some pumping from lake for domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,051.81 ft (625.392 m), from high-water mark, occurred during period Jan. 19 to Feb. 5, 1974; minimum observed, 2,046.20 ft (623.682 m) Nov. 2, 1973, but may have been lower during period Oct. 1 to Nov. 1, 1973.

EXTREMES FOR CURRENT YEAR: Maximum elevation observed, 2,049.80 ft (624.779 m), Apr. 16, 19; minimum observed, 2,047.64 ft (624.121 m) Nov. 7, 10.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2047.68	---	---	---	2049.20	---	---	---	---	---	---
2	---	---	---	---	2049.02	---	---	---	---	2049.38	---	---
3	2047.84	2047.68	---	2048.32	---	---	---	---	2049.50	---	---	2048.58
4	---	---	2047.93	---	---	---	2049.60	2049.60	---	---	2048.80	---
5	---	---	---	2048.40	---	2049.20	---	---	---	---	---	---
6	---	---	---	---	2049.04	---	---	---	---	2049.32	---	2048.50
7	2047.82	2047.64	2048.00	---	---	---	---	2049.60	2049.50	---	2048.76	---
8	2047.80	---	---	---	---	2049.20	2049.70	---	---	---	---	---
9	---	---	---	2048.60	---	---	---	2049.54	---	2049.30	---	---
10	---	2047.64	---	---	2049.04	---	---	---	2049.50	---	2048.72	2048.42
11	2047.78	---	---	2048.80	---	---	2049.76	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	2049.28	---	---
13	2047.74	---	2048.20	---	---	2049.20	---	2049.64	---	---	---	2048.38
14	---	2047.68	---	---	2049.10	---	---	---	2049.50	---	2048.70	---
15	---	---	2048.22	---	---	2049.16	---	2049.70	---	---	---	---
16	2047.74	---	---	2048.84	---	---	2049.80	---	---	2049.20	---	---
17	---	---	---	---	2049.14	---	---	2049.60	---	---	2048.68	2048.30
18	---	2047.70	---	---	---	---	---	---	2049.50	---	---	---
19	2047.72	---	2048.24	---	---	2049.20	2049.80	---	---	2049.15	---	---
20	---	---	---	2048.88	---	---	---	---	---	---	---	2048.26
21	---	2047.74	---	---	2049.18	---	---	2049.60	2049.50	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	2047.70	2047.76	2048.24	2048.93	2049.18	2049.28	2049.72	---	---	2049.10	---	2048.18
24	---	---	---	---	---	---	---	2049.56	---	---	---	2048.20
25	---	---	---	---	---	---	---	---	2049.48	---	---	---
26	---	2047.80	---	---	---	2049.36	2049.70	---	---	---	---	---
27	2047.70	---	2048.26	2048.96	2049.20	---	---	---	---	---	---	2048.14
28	---	---	---	---	---	2049.40	---	2049.52	---	---	---	---
29	---	---	---	---	---	---	2049.65	---	2049.40	---	---	---
30	---	2047.86	2048.28	---	---	---	---	---	---	---	2048.60	---
31	---	---	---	2049.02	---	2049.48	---	2049.50	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

12422500 SPOKANE RIVER AT SPOKANE, WA

LOCATION.--Lat 47°39'34", long 117°26'53", in SW¼SW¼ sec.13, T.25 N., R.42 E., Spokane County, Hydrologic Unit 17010305, on right bank at Cochran Street in Spokane, 0.5 mi (0.8 km) upstream from Hangman Creek, and at mile 72.9 (117.3 km).

DRAINAGE AREA.--4,290 mi² (11,100 km²), approximately.

PERIOD OF RECORD.--April 1891 to current year. Chemical analyses October 1972 to September 1973.

REVISED RECORDS.--WSP 532: 1891-1904. WSP 1246: Drainage area. WSP 1286: 1907-9.

GAGE.--Water-stage recorder. Datum of gage is 1,696.6 ft (517.12 m) above mean sea level (river-profile survey). Prior to July 1, 1921, water-stage recorders and nonrecording gages at several sites within 4 mi (6 km) of present site at various datums.

REMARKS.--Records excellent except those for period of no gage-height record, Aug. 14 to Sept. 28, which are good. Flow slightly regulated by powerplants of Washington Water Power Co. at Post Falls, Idaho, 28.8 mi (46.3 km) upstream and at Spokane, 1.3 mi (2.1 km) upstream, and by Coeur d'Alene Lake, Idaho. Rathdrum Prairie Canal diverts water above station for irrigation. In 1946, approximately 22,600 acres (91 km²), of which about 15,000 acres (61 km²) utilized surface water, were under irrigation upstream from Spokane. Since 1966 irrigation has been from many wells in the valley near the river with only about 3,000 acres (12 km²) irrigated from the river.

AVERAGE DISCHARGE.--85 years, 6,938 ft³/s (196.5 m³/s), 5,027,000 acre-ft/yr (6,200 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,000 ft³/s (1,390 m³/s), estimated, May 31, 1894 (see WSP 532); minimum, 95 ft³/s (2.69 m³/s) Sept. 19, 1956, gage height, 15.60 ft (4.755 m); minimum daily, 466 ft³/s (13.2 m³/s) Aug. 11, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,400 ft³/s (889 m³/s) May 15, gage height, 26.56 ft (8.095 m); minimum daily 1,630 ft³/s (46.2 m³/s) Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2520	3590	3870	8110	7150	7190	7870	17200	19000	6170	1960	1810
2	2560	3620	3460	7120	7100	7110	7910	17800	18200	5190	1820	1870
3	2580	3650	4030	5830	7050	6950	8080	18800	17400	4570	1930	1870
4	2570	3660	5050	5810	7020	6580	8200	19800	16600	4500	2310	1910
5	2580	3680	9230	5730	6940	6500	8440	20700	15800	4480	2380	1840
6	2650	3700	14900	6580	6650	6190	9370	21500	15100	4380	2350	1900
7	2590	3700	16500	6910	6190	6110	10400	22100	14200	4240	2220	1950
8	2580	3810	16900	6910	6150	6050	11400	22600	13700	4610	2260	1950
9	2600	3850	18000	6880	6100	6070	12900	23500	13300	4690	2250	1800
10	2640	3850	17800	6840	6030	6180	15100	25000	13000	4690	2230	1810
11	2620	3850	16300	6780	5750	6070	17100	26800	12900	4460	2190	1910
12	2610	3850	15700	6810	6780	6090	18800	29000	12800	3870	1900	1870
13	2600	3830	14000	6430	7520	5940	20600	30700	12500	3440	1930	1900
14	2710	3830	12300	6050	7880	5880	22100	31100	10500	3460	1740	1900
15	2900	3830	9060	6690	8240	5830	23300	31200	4820	3110	1740	1900
16	2780	3840	6730	9300	8350	5680	23800	31000	4690	2710	1800	2190
17	2700	3830	6760	12400	8340	5670	23900	30500	4670	2680	2160	2250
18	2620	3350	6740	14000	8390	5600	23400	29600	5210	2650	2190	2250
19	2650	3340	6310	14500	8330	6410	22700	28900	5830	2620	2180	2260
20	2870	3830	5750	13600	8250	6930	21800	28200	5970	2510	2130	2300
21	2640	3850	5710	13600	7860	7000	21100	27200	7160	2400	2190	2250
22	2620	4140	5710	13400	7390	7050	20500	26200	8280	2380	2180	2220
23	2660	4320	5640	13100	7100	7110	19700	25100	8820	2340	2190	2260
24	2680	4350	5720	12500	6670	7150	19100	24200	7870	2320	1950	2250
25	2720	4140	5740	11400	6710	7520	18500	23700	6510	2310	1970	2280
26	2740	3780	6430	9410	6800	8010	18100	23000	5230	2310	1970	2250
27	2750	3760	7380	7800	6970	8030	17800	22200	5030	2260	1950	2280
28	2810	3750	8260	7360	7230	8000	17500	21500	5140	1910	1900	2300
29	3060	3820	7540	7290	7250	7950	17200	20900	5300	1790	1630	2250
30	3110	4330	7780	7240	---	7870	17100	20200	5760	1820	1720	2260
31	3140	---	8090	7190	---	7860	---	19600	---	1960	1760	---
TOTAL	83860	114730	283390	273570	208190	208790	503770	759800	301290	102810	63080	62040
MEAN	2705	3824	9142	8825	7179	6735	16790	24510	10040	3316	2035	2068
MAX	3140	4350	18000	14500	8390	8030	23900	31200	19000	6170	2380	2300
MIN	2520	3340	3460	5730	5750	5670	7870	17200	4670	1790	1630	1800
AC-FT	166300	227600	562100	542600	412900	414100	999200	1507000	597600	203900	125100	123100

CAL YR 1975 TOTAL 2701240 MEAN 7401 MAX 31800 MIN 1320 AC-FT 5358000
WTR YR 1976 TOTAL 2965320 MEAN 8102 MAX 31200 MIN 1630 AC-FT 5882000

12424000 HANGMAN CREEK AT SPOKANE, WA

LOCATION.--Lat 47°39'10", long 117°26'55", in NW¼ sec.24, T.25 N., R.42 E., Spokane County, Hydrologic Unit 17010306, on left bank 0.3 mi (0.5 km) downstream from bridge on Interstate 90 in Spokane and at mile 0.8 (1.3 km).

DRAINAGE AREA.--689 mi^2 (1,785 km^2).

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1958, published as Latah Creek at Spokane.

REVISED RECORDS.--WSP 1933: Drainage area. WSP 2133: 1965(P).

GAGE.--Water-stage recorder. Altitude of gage is 1,720 ft (524 m), from topographic map. Prior to Nov. 22, 1948, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Records fair. No regulation. Some diversions for irrigation above station.

AVERAGE DISCHARGE.--28 years, 259 ft^3/s (7.335 m^3/s), 5.10 in/yr (130 mm/yr), 187,600 acre-ft/yr (231 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft^3/s (583 m^3/s) Feb. 3, 1963, gage height, 13.35 ft (4.069 m); minimum, 1.4 ft^3/s (0.040 m^3/s) Sept. 6, 7, 9, 10, 14-17, 1973, gage height, 1.47 ft (0.448 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s (70.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 26	2345	4,530	128	7.58	2.310	Jan. 16	0515	*6,320	179	*8.56	2.609

Minimum daily discharge, 14 ft^3/s (0.40 m^3/s) July 3-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	43	72	160	385	680	646	233	16	16	21	20
2	27	42	781	150	300	500	742	230	26	16	19	20
3	33	41	634	165	200	410	586	233	66	14	18	20
4	32	40	440	170	140	330	515	233	47	14	19	20
5	33	40	350	165	100	300	495	191	33	14	20	20
6	33	40	290	190	68	280	515	194	26	14	21	20
7	32	40	276	180	58	300	556	180	22	16	20	20
8	31	39	879	190	60	350	544	170	18	23	19	20
9	31	38	1240	180	62	450	526	158	16	20	20	20
10	34	37	580	190	70	556	550	149	16	19	19	20
11	32	37	385	190	80	1100	500	146	16	18	20	20
12	32	37	284	170	100	646	445	180	16	17	19	20
13	32	37	216	250	292	430	550	137	16	16	18	20
14	32	38	137	385	658	420	616	93	35	16	20	20
15	32	38	98	3500	465	390	970	55	52	19	19	20
16	32	37	80	5320	440	375	844	40	54	23	20	20
17	32	36	56	2790	893	460	568	32	161	23	19	20
18	32	35	45	2090	664	676	510	26	143	21	20	20
19	31	34	36	1370	748	1150	837	22	75	20	25	19
20	31	33	28	816	556	664	851	20	63	20	23	18
21	32	32	25	586	395	515	1220	45	57	21	21	19
22	32	31	23	475	370	682	767	127	54	21	20	18
23	32	30	30	405	616	837	622	60	52	20	20	18
24	32	30	50	375	914	802	510	38	48	20	20	18
25	36	30	100	312	1790	1500	465	27	45	20	42	19
26	38	127	1790	268	1380	754	400	22	43	20	26	19
27	42	102	2220	260	1020	658	355	20	42	20	24	18
28	45	72	640	490	1670	610	316	18	38	20	24	18
29	43	60	425	520	886	706	280	17	21	19	23	19
30	45	54	300	460	---	622	256	17	18	20	22	19
31	43	---	210	430	---	532	---	16	---	20	22	---
TOTAL	1050	1330	12720	[illegible]	15380	18685	17557	3129	1335	580	663	582
MEAN	33.9	44.3	410	749	530	603	585	101	44.5	18.7	21.4	19.4
MAX	45	127	2220	5320	1790	1500	1220	233	161	23	42	20
MIN	26	30	23	150	58	280	256	16	16	14	18	18
AC-FT	2080	2640	25230	46060	30510	37060	34820	6210	2650	1150	1320	1150

CAL YR 1975 TOTAL 119003 MEAN 326 MAX 7160 MIN 23 AC-FT 236000
WTR YR 1976 TOTAL 96233 MEAN 263 MAX 5320 MIN 14 AC-FT 190900

12424200 SPOKANE RIVER AT RIVERSIDE STATE PARK, AT SPOKANE, WA
(National Water Quality Surveillance System)

LOCATION.--Lat 47°41'48", long 117°29'48", in SE¼NE¼ sec.4, T.25 N., R.42 E., Spokane County, Hydrologic Unit 17010307, at Riverside State Park on west edge of Spokane, and at mile 66.1 (106.4 km).

DRAINAGE AREA.--5,010 mi² (12,980 km²), approximately.

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	CLOUD COVER (PERCENT)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
OCT 08...	1000	2670	145	7.1	40	11.7	2	9.0	12	42000	7.5	81
NOV 13...	0815	4160	92	7.2	20	6.7	0	11.2	7	6500	7.3	69
DEC 10...	0930	17700	45	7.2	100	6.1	13	13.2	9	15000	8.3	52
JAN 05...	0930	13300	139	7.1	0	4.0	3	12.2	10	1300	8.3	60
FEB 05...	1430	7050	100	7.1	0	1.9	2	13.8	4	900	8.1	65
MAR 11...	1330	7530	139	6.8	30	3.9	170	12.2	16	6700	10	79
APR 13...	0845	20800	54	7.2	100	4.3	1	14.2	16	1600	8.1	52
MAY 11...	1300	27400	61	7.2	50	10.6	3	12.2	13	3700	9.6	40
JUN 22...	1310	8860	74	7.6	100	15.1	1	10.4	12	5800	9.1	50
JUL 06...	1415	4330	105	7.6	50	18.4	0	9.4	14	22	8.2	82
AUG 02...	1145	2000	160	7.9	100	18.6	0	8.6	22	310	9.3	102
SEP 02...	1430	2020	170	8.4	0	17.5	0	9.0	9	24000	8.5	97

DATE	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL OHGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL NITROGEN (NO3) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 08...	.11	584	20	.33	.50	.12	.62	.95	4.2	.12	.06	2.7
NOV 13...	.09	775	0	.25	.15	.20	.35	.60	2.7	.06	.04	2.0
DEC 10...	.07	2490	31	.22	.14	.12	.26	.48	2.1	.06	.02	3.8
JAN 05...	.08	2150	6	.29	.09	.16	.25	.54	2.4	.04	.01	2.4
FEB 05...	.09	1240	2	.23	.14	.19	.33	.56	2.5	.06	.03	1.8
MAR 11...	.11	1610	440	.92	.29	2.9	3.2	4.1	18	.97	.03	12
APR 13...	.07	2920	4	.01	.10	.16	.26	.27	1.2	.05	.01	2.3
MAY 11...	.05	2960	10	.02	.07	.13	.20	.22	1.0	.04	.01	2.7
JUN 22...	.07	1200	1	.14	.12	.19	.31	.45	2.0	.05	.03	--
JUL 06...	.11	959	1	.23	.22	.19	.41	.64	2.8	.10	.06	2.1
AUG 02...	.14	551	7	.22	.42	.29	.71	.93	4.1	.12	.08	1.9
SEP 02...	.13	529	1	.50	.47	.34	.81	1.3	5.8	.15	.12	2.2

12424200 SPOKANE RIVER AT RIVERSIDE STATE PARK, AT SPOKANE, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	TOTAL CALCIUM (CA) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM
JAN										
05...	0930	43	13	12	12	3.7	3.2	4.7	3.3	14
MAR										
11...	1330	45	12	14	11	7.7	4.2	3.8	4.2	16
JUN										
22...	1310	35	0	18	8.9	5.3	3.0	1.7	2.0	11
SEP										
02...	1430	77	6	14	19	7.0	7.1	3.8	4.1	10

DATE	SODIUM ADSORPTION RATIO	TOTAL POTASSIUM (K) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
JAN										
05...	.2	1.3	1.2	37	0	30	4.7	17	3.9	67
MAR										
11...	.3	4.3	1.9	40	0	33	10	14	5.2	70
JUN										
22...	.1	.8	.9	42	0	34	1.7	8.0	1.4	54
SEP										
02...	.2	1.4	1.5	86	0	71	.5	11	3.5	97

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
JAN									
05...	1	<10	0	10	230	<100	.1	0	220
MAR									
11...	8	10	20	40	16000	<100	.0	0	260
JUN									
22...	0	1	<10	0	180	6	<.5	0	120
SEP									
02...	1	<10	0	10	100	<100	.0	0	60

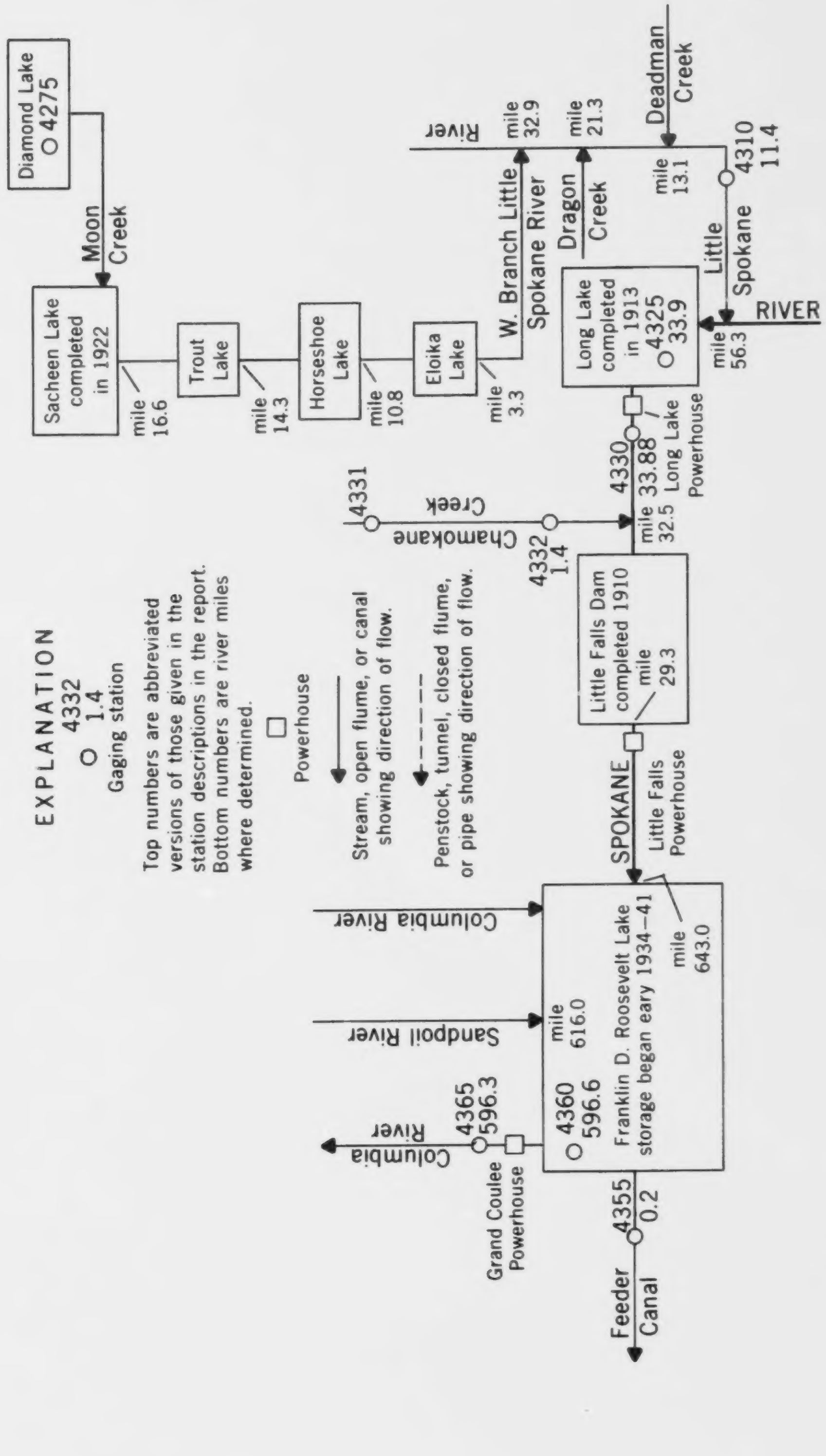
Diamond Lake
4275
Moon Creek
Sacheen Lake completed in 1922
mile 16.6
Trout Lake
mile 14.3
Horseshoe Lake
mile 10.8
Eloika Lake
mile 3.3
W. Branch Little Spokane River
River
mile 32.9
Dragon Creek
mile 21.3
Deadman Creek
mile 13.1
4310
11.4
Little Spokane
RIVER
Long Lake completed in 1913
4325
33.9
mile 56.3
4330
33.88
Long Lake Powerhouse
4331
Chamokane Creek
4332
1.4
mile 32.5
Little Falls Dam completed 1910
mile 29.3
Little Falls Powerhouse
SPOKANE
Columbia River
Sandpoil River
mile 643.0
mile 616.0
4360
596.6
Franklin D. Roosevelt Lake storage began eary 1934–41
4365
596.3
Columbia River
Grand Coulee Powerhouse
4355
0.2
Feeder Canal
EXPLANATION
4332
1.4
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.

Figure 8. Gaging stations in Spokane River basin from Little Spokane River downstream and at Grand Coulee Dam.

12427500 DIAMOND LAKE NEAR NEWPORT, WA

LOCATION.--Lat 48°07'59", long 117°12'03", in SE¼NW¼ sec.2, T.30 N., R.44 E., Pend Oreille County, Hydrologic Unit 17010308, on north shore at Boy Scouts of America Camp Cowles, 8 mi (13 km) southwest of Newport.

DRAINAGE AREA.--17.4 mi² (45.1 km²).

PERIOD OF RECORD.-July 1953 to current year (fragmentary), chemical analyses October 1971 to September 1972.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Nonrecording gage. Altitude of gage is about 2,340 ft (713 m), from topographic map. Prior to Sept. 9, 1961, nonrecording gage on southeast shore, and Sept. 9, 1961, to Sept. 20, 1967, nonrecording gage 500 ft (152 m) downlake, at same datum.

REMARKS.--No known regulation. Some diversion for domestic use. Gage heights to top of ice Dec. 7, 9, 23, 25 and Jan. 22.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 4.95 ft (1.509 m), Feb. 25, 1958; minimum observed, 2.47 ft (0.753 m) Oct. 4, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 4.94 ft (1.506 m), Jan. 13; minimum observed, 4.11 ft (1.253 m) Sept. 27.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---		---	---	---	---	4.57	4.33	4.29
2	4.69	4.63	4.71	---		---	---	4.69	---	---	---	---
3	---	---	---	---		---	4.70	---	4.67	---	---	---
4	---	4.63	4.70	---		---	4.68	---	---	---	4.31	---
5	4.68	---	---	---		---	4.69	---	---	4.51	---	4.26
6	---	4.63	---	---		---	---	4.67	4.61	---	---	---
7	4.68	---	4.69	---		---	---	---	---	---	---	---
8	---	---	---	---		---	4.70	---	---	4.51	4.29	4.21
9	4.68	4.64	4.66	---		---	---	---	---	---	---	---
10	---	---	---	---		---	---	4.68	---	---	---	4.19
11	---	4.64	4.70	---		---	4.67	---	4.59	4.51	4.27	---
12	4.66	---	---	---		---	---	---	---	---	---	4.17
13	---	4.64	---	4.94		---	---	4.67	4.61	---	---	---
14	4.65	---	4.70	---		---	4.67	---	---	4.52	---	---
15	---	---	---	---		---	---	---	---	---	4.25	4.17
16	4.65	4.65	4.70	---		---	4.70	4.65	4.61	---	---	---
17	---	---	---	---		4.61	---	---	---	---	---	---
18	---	4.63	4.70	4.91		---	---	---	---	4.47	4.25	---
19	4.65	---	---	---		---	---	---	---	---	---	4.16
20	---	4.62	---	4.91		---	---	4.67	4.59	---	---	---
21	4.64	---	4.70	---		---	4.73	---	---	4.45	---	---
22	---	---	---	4.90		---	4.73	---	---	---	4.23	---
23	4.63	4.62	4.68	---		---	---	4.65	4.59	---	---	4.15
24	---	---	---	---		---	---	---	---	---	---	---
25	---	4.66	4.68	---		---	---	---	---	4.41	4.34	---
26	4.64	---	---	---		---	---	---	---	---	---	---
27	---	4.70	---	---		---	---	4.65	4.57	---	---	4.11
28	4.57	---	---	---		---	4.66	---	---	---	---	---
29	---	---	---	---		---	---	---	---	4.40	4.27	---
30	4.63	4.71	---	---		---	4.73	---	4.59	---	---	4.12
31	---	---	---	---		---	---	4.65	---	---	---	---
MEAN	---	---	---	---		---	---	---	---	---	---	---
MAX	---	---	---	---		---	---	---	---	---	---	---
MIN	---	---	---	---		---	---	---	---	---	---	---

12431000 LITTLE SPOKANE RIVER AT DARTFORD, WA

LOCATION.--Lat 47°47'05", long 117°24'12", in NE¼NW¼ sec.5, T.26 N., R.43 E., Spokane County, Hydrologic Unit 17010308, on left bank 50 ft (15 m) upstream from county bridge, 0.5 mi (0.8 km) east of Dartford, 1.7 mi (2.7 km) downstream from Deadman Creek, 7.5 mi (12.1 km) north of Spokane, and at mile 11.4 (18.3 km).

DRAINAGE AREA.--665 mi^2 (1,722 km^2).

PERIOD OF RECORD.--April 1929 to September 1932, December 1946 to current year, chemical analyses July 1960 to September 1970, water temperatures July 1968 to September 1970.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1286: 1930, 1932(M), 1947-49(M). WSP 1446: 1951(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,590 ft (485 m), from topographic map. Prior to Mar. 16, 1951, nonrecording gage and Mar. 16, 1951, to July 5, 1961, water-stage recorder, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records excellent. No regulation. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--32 years (water years 1930-32, 1948-76), 321 ft^3/s (9.091 m^3/s), 6.56 in/yr (167 mm/yr), 232,600 acre-ft/yr (287 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,170 ft^3/s (89.8 m^3/s) Feb. 17, 1970, gage height, 7.29 ft (2.222 m); minimum observed, 63 ft^3/s (1.78 m^3/s) July 24, 1930, gage height, 1.07 ft (0.326 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,760 ft^3/s (49.8 m^3/s) Dec. 27, gage height, 5.65 ft (1.722 m); minimum, 148 ft^3/s (4.19 m^3/s) July 28, gage height, 2.05 ft (0.625 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	275	200	262	255	359	709	489	315	191	152	170
2	168	214	258	250	255	310	637	493	302	193	163	166
3	172	209	477	262	260	300	597	505	292	191	163	165
4	184	205	388	267	211	290	613	493	285	189	161	165
5	187	203	342	275	211	290	609	478	275	189	157	163
6	184	203	266	270	257	297	621	471	267	186	159	161
7	189	217	259	260	250	297	621	457	257	184	168	161
8	190	219	256	260	250	305	637	450	260	193	172	163
9	189	215	266	250	237	341	669	466	270	197	168	165
10	191	214	268	255	237	380	681	466	262	186	168	165
11	197	210	257	272	237	425	673	471	257	184	168	165
12	194	206	244	267	350	359	665	450	250	180	168	163
13	190	205	232	250	460	338	677	432	245	178	165	161
14	189	207	211	255	765	356	689	418	240	174	168	161
15	189	221	223	297	505	377	775	397	232	165	180	161
16	189	224	211	380	593	377	752	380	260	166	184	161
17	189	218	213	415	625	425	673	362	270	165	180	163
18	189	209	212	415	443	561	541	353	247	163	174	168
19	187	194	207	359	411	547	617	341	235	161	170	166
20	186	200	201	317	359	529	633	374	225	159	176	165
21	188	196	196	280	315	422	673	394	225	163	176	163
22	191	199	197	270	315	415	621	362	232	161	172	163
23	191	206	200	270	344	601	589	341	235	157	174	163
24	188	223	204	265	394	669	577	329	227	157	172	163
25	195	226	210	255	756	721	589	323	220	155	186	163
26	218	226	692	260	770	925	565	312	218	153	208	163
27	220	229	1100	275	513	633	541	305	213	150	191	161
28	233	201	347	280	464	609	525	302	204	150	184	161
29	229	183	307	283	401	621	509	292	199	150	178	161
30	231	184	408	290	---	669	497	290	193	150	174	159
31	242	---	320	275	---	765	---	305	---	152	172	---
TOTAL	6047	6296	9372	8851	11443	14563	18875	12261	7402	5292	5351	4898
MEAN	195	210	302	286	395	470	629	396	247	171	173	163
MAX	242	229	1100	415	770	925	775	505	315	197	208	170
MIN	168	183	196	250	211	290	497	290	193	150	152	159
CFSM	.29	.32	.45	.43	.59	.71	.95	.60	.37	.26	.26	.25
IN.	.34	.35	.52	.50	.64	.81	1.06	.69	.41	.30	.30	.27
AC-FT	11990	12490	18590	17560	22700	28890	37440	24320	14680	10500	10610	9720

CAL YR 1975 TOTAL 137261 MEAN 376 MAX 1730 MIN 158 CFSM .57 IN 7.68 AC-FT 272300
WTR YR 1976 TOTAL 110651 MEAN 302 MAX 1100 MIN 150 CFSM .45 IN 6.19 AC-FT 219500

12432500 LONG LAKE AT LONG LAKE, WA

LOCATION.--Lat 47°50'12", long 117°50'20", in NW¼SW¼ sec.13, T.27 N., R.39 E., Lincoln County, Hydrologic Unit 17010307, at left end of spillway at Long Lake Dam on Spokane River, 12 mi (19 km) north of Reardon and at mile 33.9 (54.5 km).

DRAINAGE AREA.--6,020 mi^2 (15,600 km^2), approximately.

PERIOD OF RECORD.--October 1913 to current year. Prior to October 1950 monthend contents only, published in WSP 1316.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder with remote indicator in powerhouse. Datum of gage is at mean sea level (levels by Washington Water Power Co.).

REMARKS.--Reservoir is formed by concrete dam, completed in 1913 and raised in 1950. Capacity, 104,200 acre-ft (128 hm^3) between elevations 1,512 ft (460.9 m) and 1,536 ft (468.2 m), normal limits of operation. Contents at elevation 1,512 ft (460.9 m) by capacity table used prior to October 1915, 148,600 acre-ft (183 hm^3). Records given herein represent usable contents. Water used for power. About 25,000 acres (100 km^2) irrigated above station, largely from wells in the Spokane Valley. Flow regulated by Coeur d'Alene Lake (see sta 12415500) and powerplants along Spokane River.

COOPERATION.--Lake elevations and capacity table furnished by Washington Water Power Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 107,600 acre-ft (133 hm^3) Jan. 16, 1974, elevation, 1,536.67 ft (468.377 m); minimum, since filling reservoir in 1920, 5,400 acre-ft (6.66 hm^3) Mar. 8, 1966, elevation, 1,513.50 ft (461.315 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 104,700 acre-ft (129 hm^3) June 16, elevation, 1,536.10 ft (468.203 m); minimum, 48,600 acre-ft (59.9 hm^3) Apr. 5, elevation, 1,524.25 ft (464.591 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,535.68	102,600	-
Oct. 31	1,535.37	101,050	-1,550
Nov. 30	1,535.03	99,350	-1,700
Dec. 31	1,535.49	101,650	+2,300
CAL YR 1975	-	-	-850
Jan. 31	1,535.71	102,750	+1,100
Feb. 29	1,535.37	101,050	-1,700
Mar. 31	1,526.98	60,800	-40,250
Apr. 30	1,535.26	100,500	+39,700
May 31	1,535.08	99,600	-900
June 30	1,535.35	100,950	+1,350
July 31	1,535.60	102,200	+1,250
Aug. 31	1,535.52	101,800	-400
Sept. 30	1,535.68	102,600	+800
WTR YR 1976	-	-	0

12433000 SPOKANE RIVER AT LONG LAKE, WA
(National Stream Quality Accounting Network Station)

LOCATION.--Lat 47°50'12", long 117°50'25", in NW¼SW¼ sec.13, T.27 N., R.39 E., Lincoln County, Hydrologic Unit 17010307, on left bank at Long Lake powerhouse, 1.4 mi (2.3 km) upstream from Chamokane Creek, 12 mi (19 km) north of Reardon, and at mile 33.88 (54.51 km).

DRAINAGE AREA.--6,020 mi² (15,590 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,299.00 ft (395.935 m) above mean sea level.

REMARKS.--Water discharge records good. Flow regulated by Coeur d'Alene Lake (see sta 12415500) and Long Lake (see sta 12432500) for powerplants of Washington Water Power Co. About 25,000 acres (100 km²) irrigated above station, largely from wells in the Spokane Valley.

COOPERATION.--Discharge records furnished by Washington Water Power Co.; three discharge measurements made by Geological Survey.

AVERAGE DISCHARGE.--37 years, (water years, 1940-76) 8,176 ft³/s (231.5 m³/s) 5,924,000 acre-ft/yr (7,300 hm³), adjusted for storage in Long Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,700 ft³/s (1,410 m³/s) Jan. 19, 1974, gage height, 78.40 ft (23.896 m); maximum recorded gage height, 78.66 ft (23.976 m) May 24, 1948; minimum daily discharge, 114 ft³/s (3.23 m³/s) Sept. 2, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,500 ft³/s (892 m³/s) May 13, gage height, 72.16 ft (21.994 m); minimum, 210 ft³/s (5.95 m³/s) Oct. 5, gage height, 61.00 ft (18.593 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3240	4410	4600	9360	8540	8840	12100	18100	19700	6650	2360	2570
2	3040	4450	5480	8500	7880	8450	12200	18800	19200	6420	2910	3540
3	3890	4400	5900	7260	9180	7990	11300	19600	18200	6140	3090	2840
4	3920	4410	6630	7880	7980	7660	10500	20900	17800	5260	2970	2080
5	2830	4390	9720	7140	7480	7670	11300	21100	17300	5180	3200	2140
6	3400	4450	15900	7950	7330	7260	10700	21700	15600	5120	2940	2140
7	4000	4420	17100	8050	7000	7200	12500	25300	14300	5380	3400	2840
8	3720	4420	17900	7800	6830	7170	13100	23700	14900	5790	2700	2610
9	3980	4480	19400	7760	6820	7180	14300	23500	14600	5620	3400	2830
10	2770	4680	19500	8300	6980	7190	17100	25600	13800	5780	3020	2810
11	2170	4620	16500	9240	6960	8230	17600	27300	13900	5220	3400	2830
12	3040	4680	16500	7740	6960	7770	16000	28800	13800	4830	3240	2860
13	3250	4590	16100	7990	8940	7030	13200	30600	13600	4110	2160	2790
14	3050	4480	13200	6990	9840	7080	22000	30900	12400	4090	2130	2830
15	3680	4550	11000	10700	10900	7000	22700	31000	6960	4150	2150	2110
16	3570	4720	9310	15300	10100	7020	23900	31100	5070	4280	2860	2120
17	4300	4700	8480	17100	11700	7110	24000	30900	5500	4120	2880	2790
18	3330	4680	7220	16700	10300	7300	24200	30000	6570	3430	2870	2960
19	3400	4690	6940	17400	9820	8580	24100	29100	6870	3400	3060	3550
20	3530	4700	7020	14100	9820	9200	24700	27700	7040	3400	3490	3560
21	3690	4300	7090	14000	9740	9230	25400	27400	7150	3400	2240	3180
22	3360	5210	7010	14500	8480	11600	22400	27000	9100	2980	2830	2120
23	3670	5210	7220	14100	8490	13000	20800	25400	10400	2780	3270	2130
24	3450	5350	7020	13700	8810	12700	20800	24900	8940	2720	3510	2990
25	3270	5050	7200	12400	9270	12500	19700	24300	7890	2720	2520	3140
26	3450	4890	9360	11900	10600	11700	19600	24100	6350	2700	2880	2740
27	3720	5190	12900	8260	9580	11000	18300	22700	6270	2550	2850	2830
28	3570	5170	9950	7410	9540	10500	16500	22000	6510	2140	2140	2860
29	4150	4830	9400	9260	9880	11500	16600	21700	6510	2150	2070	3120
30	4310	4120	10400	8880	---	12700	17900	20800	6580	2460	2750	3190
31	4420	---	11000	8490	---	12400	---	20500	---	2740	2380	---
TOTAL	109170	140240	332950	325260	255750	281760	539500	776500	332810	127710	87670	83100
MEAN	3522	4675	10740	10490	8819	9089	17980	25050	11090	4120	2828	2770
MAX	4420	5350	19500	17400	11700	13000	25400	31100	19700	6650	3510	3560
MIN	2170	4120	4600	6990	6820	7000	10500	18100	5070	2140	2070	2080
AC-FT	216500	278200	660400	645200	507300	558900	1070000	1540000	660100	253300	173900	164800
†	-1,550	-1,700	+2,300	+1,100	-1,700	-40,250	+39,700	-900	+1,350	+1,250	-400	+800
MEAN‡	3,497	4,647	10,780	10,510	8,790	8,434	18,650	25,030	11,120	4,141	2,822	2,783
AC-FT‡	215,000	276,500	662,700	646,300	505,600	518,600	1,110M	1,539M	661,400	254,600	173,500	165,600

CAL YR 1975: TOTAL 3,135,210 MEAN 8,590 MAX 31,400 MIN 1,440 AC-FT 6,219,000
DO.....: MEAN‡ 8,589 CFSM‡ 1.43 IN.‡ 19.28 AC-FT‡ 6,218,000
WTR YR 1976: TOTAL 3,392,420 MEAN 9,269 MAX 31,100 MIN 2,070 AC-FT 6,729,000
DO.....: MEAN‡ 9,269 CFSM‡ 1.54 IN.‡ 20.86 AC-FT‡ 6,729,000

† Change in contents, in acre-feet, in Long Lake.
‡ Adjusted for change in contents, in Long Lake.
M Thousands.

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued
(National Stream-Quality Accounting Network Station)

WATER-QUALITY RECORDS

LOCATION.--Water Quality monitor 0.6 mi (1.0 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1959 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1973 to current year.
WATER TEMPERATURES: July 1959 to September 1962, October 1966 to September 1970, March 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since March 1973.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality monitor record, samples were collected approximately once a month.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 235 micromhos Sept. 8, 1973; minimum, 50 micromhos May 19, 1976.
WATER TEMPERATURES: Maximum, 24.5°C Aug. 18, 1959; minimum, 0.0°C Jan. 21, Feb. 26, 1960.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--Specific conductance: Maximum, 238 micromhos Oct. 2-3, 1961.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 177 micromhos Feb. 19; minimum, 50 micromhos May 19.
WATER TEMPERATURES: Maximum, 20.5°C July 31, Aug. 4, 7, 12, 13; minimum, 2.5°C Feb. 4, 15-17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
OCT												
22...	1245	3930	172	7.1	12.6	1	14	3	<1	78	14	20
NOV												
25...	1045	5510	160	7.3	5.6	1	--	--	<1	66	7	17
DEC												
22...	1045	7000	97	7.2	4.4	8	64	110	37	36	4	10
JAN												
22...	1115	14600	110	7.4	3.2	30	1500	390	320	48	8	12
FEB												
19...	1100	9760	177	7.0	3.2	15	550	140	102	53	7	12
MAR												
15...	1130	3000	99	7.2	3.5	23	62	7	26	47	5	12
APR												
12...	0900	14600	84	7.2	7.1	9	410	B170	91	43	6	11
MAY												
11...	0945	27900	63	6.9	9.3	8	800	B180	70	31	13	8.3
JUN												
22...	1015	7670	73	7.4	15.0	1	<1	2	1	35	3	8.8
JUL												
06...	1200	5210	102	7.6	16.8	1	7	1	19	47	3	11
AUG												
03...	1300	3870	138	7.8	20.1	2	<1	<1	720	71	11	19
30...	0930	3940	140	7.6	17.7	2	1	<1	1	80	9	20

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT												
22...	6.9	3.0	1.6	79	65	10	11	9.8	.1	7.4	103	99
NOV												
25...	5.7	3.0	.8	72	59	5.8	11	2.2	.1	7.8	81	83
DEC												
22...	2.6	2.2	1.0	39	32	3.9	10	.1	.1	8.2	53	53
JAN												
22...	4.3	3.1	1.5	48	39	3.1	9.1	2.3	.2	9.1	81	66
FEB												
19...	5.7	3.0	1.4	57	47	9.1	13	2.2	.1	6.9	70	74
MAR												
15...	4.1	2.7	1.5	51	42	5.1	11	1.5	.1	10	75	62
APR												
12...	3.8	2.1	1.1	45	37	4.5	12	1.0	.1	9.3	63	63
MAY												
11...	2.5	2.1	.9	22	18	4.4	11	5.7	.1	8.8	46	50
JUN												
22...	3.2	1.9	.8	39	32	2.5	7.3	1.1	.1	7.6	57	50
JUL												
06...	4.7	2.7	1.3	53	43	2.1	6.2	1.4	.1	8.4	60	62
AUG												
03...	5.8	3.1	1.3	73	60	1.9	9.6	2.3	.1	6.8	86	84
30...	7.3	3.7	1.5	86	71	3.5	9.9	4.5	.1	7.7	107	97

B Results based upon colony county outside the ideal range.

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	SUSPENDED SOLIDS (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT 22...	--	.42	.02	.44	.29	.46	.06	.04	2	21	98
NOV 25...	--	.46	.01	.46	.19	.55	.05	.04	3	45	94
DEC 22...	--	.23	.01	.24	.12	.24	.05	.02	4	76	100
JAN 22...	--	.59	.05	.64	.24	.54	.12	.04	44	1730	99
FEB 19...	--	.40	.01	.41	.23	.44	.10	.03	24	632	100
MAR 15...	--	.56	.02	.58	.31	.53	.11	.03	24	194	100
APR 12...	--	.28	.01	.29	.07	.41	.08	.01	18	710	99
MAY 11...	--	.05	.00	.05	.05	.29	.06	.00	14	1060	99
JUN 22...	--	.12	.00	.12	.06	.29	.03	.00	4	83	90
JUL 06...	--	.20	.01	.21	.09	.36	.03	.01	3	42	97
AUG 03...	--	.27	.02	.29	.14	.40	.05	.01	5	52	76
30...	0	.40	.00	.40	.21	.41	.08	.05	4	43	80

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT 22...	1245	3	2	0	1	30	5	<50	0	0	9	90
JAN 22...	1115	1	0	<10	15	0	0	50	0	10	21	2800
APR 12...	0900	1	1	<10	1	0	0	<50	2	10	2	770
JUL 06...	1200	1	1	1	0	10	<10	1	0	0	10	30

DATE	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 22...	10	<100	3	110	90	.0	.0	0	0	30	20	2.2
JAN 22...	150	<100	4	70	20	.0	.0	0	0	140	110	3.4
APR 12...	90	<100	3	70	50	.0	.1	0	0	150	130	3.3
JUL 06...	20	15	3	10	0	<.5	<.5	0	0	60	40	1.3

DATE	TIME	TOTAL ALDRIN (UG/L)	TOTAL ATRAZINE (UG/L)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DIAZINON (UG/L)
MAY , 1975 19...	1100	ND	--	ND	ND	ND	ND	ND
SEP 24...	1130	ND	--	ND	ND	ND	ND	ND
DEC 22...	1045	ND	ND	ND	ND	ND	ND	ND
FEB , 1976 19...	1100	ND	ND	ND	ND	ND	ND	ND
MAY 11...	0945	ND	ND	ND	ND	ND	ND	ND
AUG 30...	0930	ND	ND	ND	ND	ND	ND	ND

ND None detected.

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL DI-ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	TOTAL HEPTA-CHLOR (UG/L)	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA-THION (UG/L)	TOTAL METH-OXY-CHLOR (UG/L)	TOTAL METHYL PARA-THION (UG/L)
MAY , 1975									
19...	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEP									
24...	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC									
22...	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB , 1976									
19...	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY									
11...	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG									
30...	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	TOTAL METHYL TRI-THION (UG/L)	TOTAL PARA-THION (UG/L)	SIMA-ZINE TOTAL((UG/L)	TOTAL TOX-APHENE (UG/L)	TOTAL TRI-THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
MAY , 1975								
19...	ND	ND	--	ND	ND	--	--	--
SEP								
24...	ND	ND	--	ND	ND	--	--	--
DEC								
22...	ND	ND	--	ND	ND	ND	ND	ND
FEB , 1976								
19...	ND	ND	--	ND	ND	ND	ND	ND
MAY								
11...	ND	ND	--	ND	ND	ND	ND	ND
AUG								
30...	ND	ND	ND	ND	ND	ND	ND	ND

ND None detected.

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1,200 CELLS/ML

```
OCT. 22, 1975   _ORGANISM__NAME______________   _COMMON__NAME______   CELLS/ML      PER_CENT
  1245 HOURS
                  CHLOROPHYTA                     GREEN ALGAE
                  .CHLOROPHYCEAE
                  ..CHLOROCOCCALES
                  ...CHARACIACEAE
                L ....SCHROEDERIA                                                         0
                  ...COELASTRACEAE
                L ....COELASTRUM                                                          0
                  ...HYDRODICTYACEAE
                  ....PEDIASTRUM                                           110            9
                  ...OOCYSTACEAE
                  ....ANKISTRODESMUS                                        12            1
                L ....OOCYSTIS                                                           _0
                                                       TOTALS          -------
                                                                           120           10       0.469=DIVERSITY

                  CHRYSOPHYTA
                  .BACILLARIOPHYCEAE              DIATOMS
                  ..CENTRALES                     CENTRIC
                  ...COSCINODISCACEAE
                  ....CYCLOTELLA                                            37            3
                D ....MELOSIRA                                             540           44
                  ..PENNALES                      PENNATE
                  ...ACHNANTHACEAE
                  ....ACHNANTHES                                            25            2
                  ...FRAGILARIACEAE
                L ....ASTERIONELLA                                                        0
                D ....FRAGILARIA                                           300           24
                  ....SYNEDRA                                               12            1
                  ...NAVICULACEAE                 NAVICULOID
                  ....NAVICULA                                              37            3
                  ...NITZSCHIACEAE
                  ....NITZSCHIA                                         - --25           _2
                                                       TOTALS              970           79       1.699=DIVERSITY

                  CYANOPHYTA                      BLUE-GREEN ALGAE
                  .MYXOPHYCEAE
                  ..CHROOCOCCALES                 COCCOID
                  ...CHROOCOCCACEAE
                  ....ANACYSTIS                                         ---150          _12
                                                       TOTALS              150           12       0.000=DIVERSITY

             NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                    PHYL/DIV 0.973
                                       CLASS 0.973
                                       ORDER 1.734
                                      FAMILY 2.129
                                      GENERA 2.348
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SAMPLING METHOD - EDI

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

```
                              IDENTIFICATION OF PHYTOPLANKTON

                                       2,800 CELLS/ML

NOV. 25, 1975  _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML     PER_CENT
  1045 HOURS
                CHLOROPHYTA                     GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
                ....KIRCHNERIELLA                                        290          10
                ...SCENEDESMACEAE
              L ....SCENEDESMUS                                       ------          _0
                                                           TOTALS        290          10        0.000=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE              DIATOMS
                ..CENTRALES                     CENTRIC
                ...COSCINODISCACEAE
                ....CYCLOTELLA                                            36           1
              D ....MELOSIRA                                           1,400          49
                ..PENNALES                      PENNATE
                ...FRAGILARIACEAE
              L ....ASTERIONELLA                                                       0
                ....FRAGILARIA                                           210           8
                ...NAVICULACEAE                 NAVICULOID
                ....NAVICULA                                              36           1
                ...NITZSCHIACEAE
                ....NITZSCHIA                                         ____71          _3
                                                           TOTALS      1,700          62        1.066=DIVERSITY

                CYANOPHYTA                      BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..OSCILLATORIALES               FILAMENTOUS
                ...NOSTOCACEAE
              D ....APHANIZOMENON                                        790          28
                ...OSCILLATORIACEAE
              L ....OSCILLATORIA                                      ------          _0
                                                           TOTALS        790          28        0.000=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                      PHYL/DIV 1.293
                                         CLASS 1.283
                                         ORDER 1.711
                                        FAMILY 1.853
                                        GENERA 1.939
                    SAMPLING METHOD - EDI

                                       1,900 CELLS/ML

DEC. 22, 1975  _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML     PER_CENT
  1045 HOURS
                CHRYSOPHYTA
                .BACILLARIOPHYCEAE              DIATOMS
                ..CENTRALES                     CENTRIC
                ...COSCINODISCACEAE
              D ....MELOSIRA                                           1,400          74
                ..PENNALES                      PENNATE
                ...DIATOMACEAE
              L ....DIATOMA                                                            0
                ...FRAGILARIACEAE
              L ....ASTERIONELLA                                                       0
              D ....FRAGILARIA                                           400          21
                ...NAVICULACEAE                 NAVICULOID
                ....NAVICULA                                              50           3
                ...NITZSCHIACEAE
                ....NITZSCHIA                                             50           3
                ...TABELLARIACEAE
              L ....TABELLARIA                                        ------          _0
                                                           TOTALS      1,900         101        1.074=DIVERSITY

                CYANOPHYTA                      BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..OSCILLATORIALES               FILAMENTOUS
                ...NOSTOCACEAE
              L ....APHANIZOMENON                                                      0

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                         ORDER 0.831
                                        FAMILY 1.074
                                        GENERA 1.074
                    SAMPLING METHOD - EDI
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12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                                IDENTIFICATION OF PHYTOPLANKTON

                                        5,600 CELLS/ML

JAN. 22, 1976  _ORGANISM__NAME_______________  _COMMON__NAME______  CELLS/ML     PER_CENT
  1115 HOURS
                CHRYSOPHYTA
                .BACILLARIOPHYCEAE                DIATOMS
                ..CENTRALES                       CENTRIC
                ...COSCINODISCACEAE
              D ....MELOSIRA                                          4,200          75
                ..PENNALES                        PENNATE
                ...ACHNANTHACEAE
              L ....ACHNANTHES                                                        0
                ...FRAGILARIACEAE
              L ....ASTERIONELLA                                                      0
              L ....FRAGILARIA                                                        0
                ....SYNEDRA                                             130           2
                ...GOMPHONEMATACEAE
              L ....GOMPHONEMA                                                       _0
                                                           TOTALS     4,300          77        0.191=DIVERSITY
                CYANOPHYTA                        BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..OSCILLATORIALES                 FILAMENTOUS
                ...OSCILLATORIACEAE
              D ....OSCILLATORIA                                      1,300          23
                                                           TOTALS     1,300          23        0.000=DIVERSITY

              NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                        PHYL/DIV 0.773
                                           CLASS 0.773
                                           ORDER 0.921
                                          FAMILY 0.921
                                          GENERA 0.921
                    SAMPLING METHOD - EDI

                                        10,000 CELLS/ML

FEB. 19, 1976  _ORGANISM__NAME_______________  _COMMON__NAME______  CELLS/ML     PER_CENT
  1100 HOURS
                CHLOROPHYTA                       GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
                ....ANKISTRODESMUS                                      180           2
                                                           TOTALS       180           2        0.000=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE                DIATOMS
                ..CENTRALES                       CENTRIC
                ...COSCINODISCACEAE
              D ....MELOSIRA                                          9,700          96
                ..PENNALES                        PENNATE
                ...FRAGILARIACEAE
              L ....ASTERIONELLA                                                      0
              L ....FRAGILARIA                                                        0
                ...NITZSCHIACEAE
                ....NITZSCHIA                                           180           2
                ...TABELLARIACEAE
              L ....TABELLARIA                                                       _0
                                                           TOTALS     9,900          98        0.133=DIVERSITY

              NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                        PHYL/DIV 0.131
                                           CLASS 0.131
                                           ORDER 0.262
                                          FAMILY 0.262
                                          GENERA 0.262
                    SAMPLING METHOD - EDI
```

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

4,500 CELLS/ML

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MAR. 15, 1976   _ORGANISM__NAME_______________  _COMMON__NAME_______  CELLS/ML      PER_CENT
 1130 HOURS
                CHLOROPHYTA                     GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...SCENEDESMACEAE
              L ....SCENEDESMUS                                                          0

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE              DIATOMS
                ..CENTRALES                     CENTRIC
                ...COSCINODISCACEAE
              D ....MELOSIRA                                            4,200           95
                ..PENNALES                      PENNATE
                ...FRAGILARIACEAE
                ....ASTERIONELLA                                          160            4
              L ....FRAGILARIA                                                           0
                ...NITZSCHIACEAE
                ....NITZSCHIA                                              40            1
                ...TABELLARIACEAE
                ....TABELLARIA                                         ____40           _1
                                                           TOTALS       4,500          101        0.366=DIVERSITY

                CYANOPHYTA                      BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..OSCILLATORIALES               FILAMENTOUS
                ...NOSTOCACEAE
              L ....APHANIZOMENON                                                        0

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                      ORDER 0.299
                                     FAMILY 0.366
                                     GENERA 0.366
```

SAMPLING METHOD - EDI

12,000 CELLS/ML

```
APR. 12, 1976   _ORGANISM__NAME_______________  _COMMON__NAME_______  CELLS/ML      PER_CENT
 0900 HOURS
                CHLOROPHYTA                     GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
                ....ANKISTRODESMUS                                     ____77           _1
                                                           TOTALS          77            1        0.000=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE              DIATOMS
                ..CENTRALES                     CENTRIC
                ...COSCINODISCACEAE
                ....CYCLOTELLA                                            390            3
              D ....MELOSIRA                                           11,000           92
                ..PENNALES                      PENNATE
                ...ACHNANTHACEAE
              L ....ACHNANTHES                                                           0
              L ....RHOICOSPHENIA                                                        0
                ...DIATOMACEAE
              L ....DIATOMA                                                              0
                ...EUNOTIACEAE
              L ....ACTINELLA                                                            0
                ...FRAGILARIACEAE
              L ....FRAGILARIA                                                           0
                ...NAVICULACEAE                 NAVICULOID
              L ....NAVICULA                                                             0
                ...NITZSCHIACEAE
                ....NITZSCHIA                                          ___310           _2
                                                           TOTALS      12,000           97        0.527=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                   PHYL/DIV 0.055
                                      CLASS 0.055
                                      ORDER 0.303
                                     FAMILY 0.381
                                     GENERA 0.579
```

SAMPLING METHOD - EDI

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

```
                                IDENTIFICATION OF PHYTOPLANKTON

                                       17,000 CELLS/ML

MAY 11, 1976   _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML     PER_CENT
 0945 HOURS
               CHLOROPHYTA                      GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
               ....TETRAEDRON                                           420           2
                                                          TOTALS        420           2       0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE               DIATOMS
               ..CENTRALES                      CENTRIC
               ...COSCINODISCACEAE
             D ....MELOSIRA                                          16,000          93
               ..PENNALES                       PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                           140           1
               ...FRAGILARIACEAE
               ....ASTERIONELLA                                         140           1
               ...NITZSCHIACEAE
               ....NITZSCHIA                                            420           2
                                                          TOTALS     17,000          97       0.309=DIVERSITY

             NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                 PHYL/DIV 0.166
                                    CLASS 0.166
                                    ORDER 0.412
                                   FAMILY 0.468
                                   GENERA 0.468
                   SAMPLING METHOD - EDI

                                       14,000 CELLS/ML

JUNE 22, 1976  _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML     PER_CENT
 1015 HOURS
               CHLOROPHYTA                      GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
               ....ANKISTRODESMUS                                       210           1
               ....KIRCHNERIELLA                                        320           2
                                                          TOTALS        530           3       0.971=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE               DIATOMS
               ..CENTRALES                      CENTRIC
               ...COSCINODISCACEAE
             D ....MELOSIRA                                           8,600          60
               ..PENNALES                       PENNATE
               ...FRAGILARIACEAE
               ....ASTERIONELLA                                         320           2
             D ....FRAGILARIA                                         3,200          22
               ...NITZSCHIACEAE
               ....NITZSCHIA                                          1,700          12
                                                          TOTALS     14,000          96       1.405=DIVERSITY

             NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                 PHYL/DIV 0.227
                                    CLASS 0.227
                                    ORDER 1.146
                                   FAMILY 1.474
                                   GENERA 1.617
                   SAMPLING METHOD - EDI
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12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

```
                              IDENTIFICATION OF PHYTOPLANKTON

                                     8.800 CELLS/ML

AUG. 3, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML      PER_CENT
 1300 HOURS
                CHLOROPHYTA                  GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
              L ....DICTYOSPHAERIUM                                              0
                ....OOCYSTIS                                        210          2
                ...SCENEDESMACEAE
              L ....ACTINASTRUM                                                  0
              L ....SCENEDESMUS                                                  0
                ..TETRASPORALES
                ...PALMELLACEAE
                ....GLOEOCYSTIS                                  ____53         _1
                                                      TOTALS        270          3        0.722=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE           DIATOMS
                ..CENTRALES                  CENTRIC
                ...COSCINODISCACEAE
              L ....MELOSIRA                                                     0
                ..PENNALES                   PENNATE
                ...FRAGILARIACEAE
              D ....FRAGILARIA                                   _8.100        _92
                                                      TOTALS      8.100         92        0.000=DIVERSITY

                CYANOPHYTA                   BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..CHROOCOCCALES              COCCOID
                ...CHROOCOCCACEAE
                ....ANACYSTIS                                     ___430         _5
                                                      TOTALS        430          5        0.000=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                   PHYL/DIV 0.471
                                      CLASS 0.471
                                      ORDER 0.493
                                     FAMILY 0.493
                                     GENERA 0.493
                    SAMPLING METHOD - EDI
```

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

```
                              IDENTIFICATION OF PHYTOPLANKTON

                                     14.000 CELLS/ML

AUG. 30, 1976  _ORGANISM__NAME_____________  _COMMON__NAME______  CELLS/ML     PER_CENT
  0930 HOURS
               CHLOROPHYTA                   GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...CHARACIACEAE
             L ....SCHROEDERIA                                                    0
               ...COELASTRACEAE
               ....COELASTRUM                                      1.100          6
               ...HYDRODICTYACEAE
               ....PEDIASTRUM                                        840          5
               ...OOCYSTACEAE
               ....CHODATELLA                                        140          1
               ....DICTYOSPHAERIUM                                   490          3
               ....WESTELLA                                        1.200          7
               ...SCENEDESMACEAE
               ....CRUCIGENIA                                      2.200         12
               ..VOLVOCALES
               ...VOLVOCACEAE
               ....EUDORINA                                      __1.100         _6
                                                         TOTALS    7.200         40       2.588=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE            DIATOMS
               ..CENTRALES                   CENTRIC
               ...COSCINODISCACEAE
               ....MELOSIRA                                        1.300          7
               ..PENNALES                    PENNATE
               ...ACHNANTHACEAE
             L ....COCCONEIS                                                      0
               ...FRAGILARIACEAE
             D ....FRAGILARIA                                    __8.900         49
                                                         TOTALS   10.000         56       0.599=DIVERSITY

               .CHRYSOPHYCEAE                YELLOW-BROWN ALGAE
               ..CHRYSOMONADALES
               ...MALLOMONADACEAE
             L ....MALLOMONAS                                                     0

               CYANOPHYTA                    BLUE-GREEN ALGAE
               .MYXOPHYCEAE
               ..CHROOCOCCALES               COCCOID
               ...CHROOCOCCACEAE
               ....ANACYSTIS                                     ___560          _3
                                                         TOTALS     560           3       0.000=DIVERSITY

               NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                     L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                     ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                     DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                          PHYL/DIV 1.149
                                             CLASS 1.149
                                             ORDER 1.706
                                            FAMILY 2.408
                                            GENERA 2.530
                     SAMPLING METHOD - EDI
```

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m²)		Chlorophyll a (mg/m²)	Chlorophyll b (mg/m²)	Biomass pigment ratio	Sampling method
		Dry weight	Ash weight				
Oct. 22	28	1.5	0.5	4.8	1.5	210	Polyethylene strip

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	143	139	141	171	168	170	158	157	158	120	118	119
2	145	141	144	171	170	170	159	157	158	120	118	119
3	146	137	142	172	171	171	159	158	158	120	119	120
4	144	137	140	173	169	170	159	154	157	120	120	120
5	152	142	146	171	169	170	155	153	154	120	119	120
6	151	142	145	170	169	170	154	153	153	119	117	118
7	147	144	145	171	169	170	153	149	151	116	116	116
8	148	141	145	171	170	171	149	149	149	116	116	116
9	150	147	149	171	170	170	149	148	149	116	115	116
10	153	150	152	171	170	171	149	120	139	114	113	114
11	155	153	154	171	171	171	119	109	112	115	112	114
12	156	146	152	172	170	171	110	106	109	114	113	113
13	152	143	147	174	171	172	106	104	105	115	113	115
14	154	142	149	174	172	173	105	101	103	116	115	116
15	154	148	152	175	173	174	102	100	101	117	115	116
16	162	153	156	173	171	172	101	99	100	119	117	118
17	164	160	162	172	171	171	100	99	99	120	118	119
18	166	163	164	172	169	170	99	97	98	119	118	119
19	168	165	166	168	164	167	98	96	97	119	118	118
20	170	168	169	167	165	166	98	96	97	119	116	117
21	171	170	170	166	165	166	98	96	97	115	110	113
22	172	169	171	167	166	166	100	96	97	111	96	109
23	169	167	168	165	162	164	98	97	98	108	99	103
24	169	166	168	162	160	161	99	97	98	101	99	99
25	169	168	169	160	156	158	101	99	100	101	99	100
26	170	167	168	159	157	158	102	99	101	102	100	101
27	170	168	169	159	156	157	110	103	106	104	102	103
28	171	169	170	157	155	156	112	109	111	106	104	106
29	170	169	169	158	155	157	115	111	113	108	105	107
30	171	169	170	158	157	158	119	115	118	110	108	109
31	171	169	169	---	---	---	120	118	119	112	110	111
MONTH	172	137	157	175	155	167	159	96	120	120	96	113

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	113	113	113	134	132	133	98	96	97	68	62	64
2	116	116	116	130	127	129	97	95	96	67	63	65
3	119	117	118	130	127	128	97	94	95	67	62	65
4	121	119	121	127	125	126	98	94	95	65	63	64
5	128	123	125	125	122	124	99	94	96	65	62	63
6	132	130	131	124	122	123	97	95	96	---	---	---
7	137	134	136	121	119	120	99	95	97	---	---	---
8	145	140	142	119	116	118	100	95	97	---	---	---
9	148	145	147	116	114	115	98	95	96	---	---	---
10	151	149	150	113	112	113	97	94	95	---	---	---
11	151	148	150	111	110	110	94	89	91	64	63	63
12	155	153	154	108	104	107	88	83	87	65	61	62
13	159	157	158	105	103	104	85	81	83	62	59	61
14	161	159	160	103	100	101	80	76	78	61	57	59
15	165	162	164	100	98	99	75	69	72	59	55	57
16	167	167	167	102	99	101	68	64	67	58	53	55
17	171	169	170	103	101	102	64	62	63	55	52	54
18	175	173	174	103	102	102	63	61	62	55	52	53
19	177	176	177	104	102	103	63	61	62	55	50	52
20	174	173	173	104	103	103	62	61	62	55	51	53
21	170	168	169	104	102	103	63	60	61	57	53	55
22	165	164	165	105	102	103	62	60	61	57	52	54
23	162	160	161	104	102	104	63	61	62	54	53	54
24	160	157	159	106	104	105	63	62	63	56	53	54
25	156	151	153	106	103	105	63	62	63	55	53	54
26	149	147	148	106	102	105	64	63	63	57	52	55
27	144	142	143	106	104	105	65	63	64	57	54	55
28	141	139	140	105	101	104	66	62	63	56	54	55
29	136	134	135	101	97	99	66	62	64	58	55	56
30	---	---	---	103	96	100	67	62	64	56	55	55
31	---	---	---	100	98	99	---	---	---	57	55	56
MONTH	177	113	149	134	96	109	100	60	77	68	50	57

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	57	55	56	96	94	95	133	130	131	144	141	142
2	58	56	57	97	93	95	139	133	136	---	---	---
3	59	56	57	99	95	97	139	127	133	---	---	---
4	61	56	58	100	97	98	133	128	130	---	---	---
5	62	57	60	103	98	100	131	127	129	---	---	---
6	64	58	61	107	101	104	135	130	132	---	---	---
7	65	60	62	105	102	104	131	128	130	---	---	---
8	67	62	64	106	104	105	134	128	131	---	---	---
9	68	64	66	106	104	105	133	131	132	---	---	---
10	67	64	65	106	103	105	134	130	132	---	---	---
11	67	63	65	108	104	106	136	130	133	---	---	---
12	68	65	66	110	106	108	135	131	133	---	---	---
13	68	65	67	112	108	110	140	132	136	---	---	---
14	71	66	68	114	110	112	136	134	135	---	---	---
15	72	68	70	115	110	113	139	136	138	---	---	---
16	77	71	73	119	111	115	137	130	134	---	---	---
17	75	71	73	119	113	116	147	132	141	---	---	---
18	75	69	72	120	115	117	140	137	138	---	---	---
19	75	71	73	120	116	118	139	135	137	---	---	---
20	75	71	73	117	116	116	140	136	138	---	---	---
21	74	72	73	119	115	117	144	137	141	---	---	---
22	73	62	72	122	119	120	143	136	139	---	---	---
23	71	61	66	124	118	121	139	135	137	---	---	---
24	83	71	76	123	120	122	139	135	138	---	---	---
25	86	76	82	127	122	124	140	137	139	---	---	---
26	86	78	82	127	122	124	142	136	140	---	---	---
27	90	84	86	134	125	128	145	141	143	---	---	---
28	94	87	90	130	125	127	143	139	141	---	---	---
29	96	89	92	129	126	128	145	140	142	---	---	---
30	96	92	94	130	126	129	143	140	142	---	---	---
31	---	---	---	132	126	129	145	139	142	---	---	---
MONTH	96	55	71	134	93	113	147	127	136	---	---	---
YEAR	177	50	116									

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.0	15.5	15.5	10.0	9.5	9.5	4.5	4.5	4.5	3.5	3.5	3.5
2	16.0	15.5	15.5	10.0	9.5	9.5	4.5	4.5	4.5	3.5	3.5	3.5
3	16.0	15.5	16.0	10.0	9.0	9.5	4.5	4.5	4.5	3.5	3.5	3.5
4	15.5	14.5	15.0	9.5	8.5	9.0	5.0	4.0	4.5	3.5	3.5	3.5
5	15.5	14.5	15.0	9.5	9.0	9.0	4.5	4.0	4.5	4.0	3.5	3.5
6	15.5	15.0	15.0	9.0	9.0	9.0	4.5	4.0	4.0	4.0	3.5	4.0
7	15.0	14.5	15.0	8.5	8.5	8.5	4.0	4.0	4.0	3.5	3.5	3.5
8	15.0	14.5	14.5	9.0	9.0	9.0	4.0	4.0	4.0	3.5	3.5	3.5
9	15.0	14.5	14.5	9.0	8.5	8.5	4.0	3.5	3.5	3.5	3.0	3.0
10	15.0	14.5	14.5	8.5	8.5	8.5	4.5	4.0	4.5	3.0	3.0	3.0
11	15.0	14.5	14.5	8.5	8.5	8.5	4.5	4.5	4.5	3.5	3.0	3.0
12	15.0	14.5	14.5	8.0	8.0	8.0	5.0	4.5	4.5	3.5	3.0	3.0
13	14.5	14.0	14.0	8.0	8.0	8.0	5.0	4.5	5.0	3.0	3.0	3.0
14	14.0	13.5	14.0	8.0	8.0	8.0	5.0	4.5	4.5	3.0	3.0	3.0
15	14.0	13.5	14.0	8.0	8.0	8.0	5.0	4.5	5.0	3.0	3.0	3.0
16	14.0	13.5	13.5	8.0	7.5	7.5	4.5	4.5	4.5	3.0	3.0	3.0
17	14.0	13.5	13.5	7.5	7.5	7.5	5.0	4.5	4.5	3.5	3.0	3.5
18	14.0	13.0	13.5	7.5	7.0	7.5	4.5	4.5	4.5	3.5	3.5	3.5
19	13.5	13.0	13.5	7.0	7.0	7.0	4.5	4.5	4.5	3.5	3.5	3.5
20	13.0	12.5	13.0	7.0	6.5	7.0	4.5	4.5	4.5	3.5	3.5	3.5
21	13.0	13.0	13.0	6.5	6.5	6.5	4.5	4.5	4.5	3.5	3.5	3.5
22	12.5	12.0	12.5	6.5	6.5	6.5	4.5	4.5	4.5	3.5	3.0	3.0
23	12.0	11.5	12.0	6.5	6.0	6.0	4.5	4.0	4.0	3.0	3.0	3.0
24	12.0	11.5	11.5	6.0	5.5	6.0	4.0	4.0	4.0	3.0	3.0	3.0
25	11.5	11.5	11.5	5.5	5.0	5.5	4.0	4.0	4.0	3.0	3.0	3.0
26	11.5	11.0	11.5	5.5	5.5	5.5	4.0	4.0	4.0	3.0	3.0	3.0
27	11.5	11.0	11.0	5.5	5.0	5.5	4.0	4.0	4.0	3.0	3.0	3.0
28	11.0	11.0	11.0	5.0	5.0	5.0	4.0	4.0	4.0	3.0	3.0	3.0
29	11.0	10.5	11.0	5.0	4.5	5.0	4.0	4.0	4.0	3.0	3.0	3.0
30	10.5	10.0	10.5	4.5	4.5	4.5	4.0	4.0	4.0	3.0	3.0	3.0
31	10.0	10.0	10.0	---	---	---	4.0	3.5	4.0	3.0	3.0	3.0
MONTH	16.0	10.0	13.5	10.0	4.5	7.5	5.0	3.5	4.5	4.0	3.0	3.0

12433000 SPOKANE RIVER AT LONG LAKE, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3.0	3.0	3.0	3.5	3.5	3.5	5.5	5.0	5.5	8.5	8.0	8.0
2	3.0	3.0	3.0	3.5	3.5	3.5	5.5	5.0	5.5	9.0	8.0	8.5
3	3.0	3.0	3.0	3.5	3.5	3.5	5.5	5.5	5.5	9.0	8.5	8.5
4	3.0	2.5	3.0	4.0	3.5	4.0	6.0	5.5	6.0	9.0	9.0	9.0
5	3.0	3.0	3.0	4.0	3.5	3.5	6.5	6.0	6.0	9.0	9.0	9.0
6	3.0	3.0	3.0	4.0	3.5	3.5	6.5	6.0	6.5	---	---	---
7	3.5	3.0	3.0	4.0	3.5	3.5	6.5	6.0	6.0	---	---	---
8	3.5	3.0	3.5	3.5	3.5	3.5	7.0	6.5	6.5	---	---	---
9	3.5	3.0	3.5	3.5	3.5	3.5	7.0	6.0	6.5	---	---	---
10	3.5	3.0	3.0	3.5	3.5	3.5	7.5	6.5	7.0	---	---	---
11	3.0	3.0	3.0	3.5	3.5	3.5	7.5	7.5	7.5	10.0	9.5	10.0
12	3.0	3.0	3.0	3.5	3.5	3.5	7.5	7.0	7.0	11.0	10.0	10.5
13	3.0	3.0	3.0	3.5	3.5	3.5	7.0	7.0	7.0	11.5	10.5	11.0
14	3.0	3.0	3.0	3.5	3.5	3.5	7.0	7.0	7.0	11.5	11.0	11.0
15	3.0	2.5	3.0	3.5	3.5	3.5	7.0	6.5	6.5	11.5	11.0	11.0
16	3.0	2.5	3.0	3.5	3.5	3.5	6.5	6.0	6.5	12.0	11.0	11.5
17	3.0	2.5	3.0	4.0	3.5	4.0	6.0	6.0	6.0	11.5	11.0	11.0
18	3.0	3.0	3.0	4.0	4.0	4.0	6.0	5.5	5.5	11.5	11.0	11.0
19	3.5	3.0	3.0	4.5	4.0	4.0	6.0	5.5	6.0	11.5	11.0	11.5
20	3.5	3.5	3.5	4.5	4.5	4.5	6.0	6.0	6.0	12.0	11.5	11.5
21	3.5	3.5	3.5	4.5	4.5	4.5	6.5	6.0	6.0	12.0	11.5	12.0
22	3.5	3.5	3.5	4.5	4.5	4.5	6.5	6.0	6.0	12.0	11.5	11.5
23	3.5	3.5	3.5	5.0	4.5	5.0	6.5	6.0	6.5	11.5	11.5	11.5
24	3.5	3.5	3.5	5.0	5.0	5.0	6.5	6.5	6.5	11.5	11.5	11.5
25	3.5	3.5	3.5	5.0	5.0	5.0	6.5	6.5	6.5	11.5	11.0	11.5
26	3.5	3.5	3.5	5.0	5.0	5.0	7.0	6.5	7.0	12.5	11.5	12.0
27	3.5	3.5	3.5	5.5	5.0	5.0	7.5	7.0	7.0	12.0	11.5	12.0
28	3.5	3.5	3.5	5.0	5.0	5.0	7.5	7.5	7.5	12.5	11.5	12.0
29	3.5	3.5	3.5	5.5	5.0	5.0	8.0	7.5	8.0	12.5	11.5	12.0
30	---	---	---	5.5	5.0	5.5	8.0	8.0	8.0	12.0	12.0	12.0
31	---	---	---	5.5	5.0	5.5	---	---	---	12.0	12.0	12.0
MONTH	3.5	2.5	3.0	5.5	3.5	4.0	8.0	5.0	6.5	12.5	8.0	11.0

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.5	12.0	12.0	16.0	15.0	15.5	20.0	19.0	19.5	18.0	17.0	17.5
2	12.5	12.0	12.0	16.5	15.0	16.0	20.0	19.5	19.5	---	---	---
3	12.0	12.0	12.0	16.5	16.0	16.5	20.0	19.5	20.0	---	---	---
4	12.5	12.0	12.0	16.5	16.0	16.5	20.5	20.0	20.0	---	---	---
5	12.0	11.5	12.0	17.5	16.0	16.5	20.0	19.5	20.0	---	---	---
6	12.5	11.5	12.0	17.5	16.5	17.0	20.0	19.5	19.5	---	---	---
7	13.0	12.0	12.5	17.0	16.5	17.0	20.5	19.5	20.0	---	---	---
8	13.0	12.5	13.0	17.5	16.0	16.5	20.0	20.0	20.0	---	---	---
9	13.5	12.5	13.0	17.0	16.0	16.0	20.0	19.5	20.0	---	---	---
10	14.0	13.0	13.5	18.0	16.0	17.0	20.0	19.5	19.5	---	---	---
11	14.0	13.5	13.5	17.5	17.0	17.0	20.0	19.5	20.0	---	---	---
12	14.0	13.5	13.5	17.5	17.0	17.0	20.5	19.5	20.0	---	---	---
13	14.5	13.5	14.0	17.5	16.5	17.0	20.5	19.0	19.5	---	---	---
14	15.0	14.0	14.5	18.5	17.0	17.5	20.0	19.5	19.5	---	---	---
15	14.5	14.0	14.5	18.5	17.5	18.0	19.5	19.5	19.5	---	---	---
16	15.0	14.0	14.5	18.5	18.0	18.5	20.0	18.5	19.5	---	---	---
17	16.0	14.0	15.0	18.5	18.0	18.5	19.5	18.0	18.5	---	---	---
18	16.0	14.5	15.0	19.5	18.0	19.0	19.5	19.0	19.0	---	---	---
19	15.0	14.0	14.5	20.0	18.0	19.0	19.0	18.5	18.5	---	---	---
20	15.0	13.5	14.5	19.5	18.5	19.0	18.5	18.0	18.0	---	---	---
21	15.0	14.5	15.0	19.0	18.0	18.5	19.0	18.0	18.5	---	---	---
22	15.0	13.5	15.0	20.0	18.0	19.0	19.0	18.5	18.5	---	---	---
23	15.5	14.5	15.0	19.5	19.0	19.5	19.0	18.5	18.5	---	---	---
24	15.0	14.0	14.5	20.0	19.0	19.5	18.5	18.0	18.5	---	---	---
25	15.0	14.0	14.5	20.0	18.0	19.0	18.5	18.5	18.5	---	---	---
26	15.5	14.5	15.0	20.0	18.5	19.5	18.0	17.5	18.0	---	---	---
27	16.0	15.0	15.5	19.5	17.5	18.5	18.5	17.5	18.0	---	---	---
28	16.5	15.0	15.5	20.0	19.0	19.5	18.5	18.0	18.5	---	---	---
29	16.5	15.5	16.0	20.0	18.5	19.5	19.0	18.0	18.5	---	---	---
30	15.5	15.0	15.5	20.0	19.5	20.0	18.5	17.5	18.0	---	---	---
31	---	---	---	20.5	20.0	20.0	18.0	17.0	17.5	---	---	---
MONTH	16.5	11.5	14.0	20.5	15.0	18.0	20.5	17.0	19.0	---	---	---
YEAR	20.5	2.5	9.5									

12433100 CHAMOKANE CREEK NEAR SPRINGDALE, WA

LOCATION.--Lat 47°59'41", long 117°43'31", in SE¼SW¼ sec.23, T.29 N., R.40 E., Stevens County, Hydrologic Unit 17010307, Spokane Indian Reservation, on right bank downstream wingwall of county road bridge, 4.3 mi (6.9 km) south of Springdale.

DRAINAGE AREA.--99.9 mi^2 (258.7 km^2).

PERIOD OF RECORD.--June 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,870 ft (570 m), from topographic map.

REMARKS.--Records good. Some diversions for irrigation and domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,950 ft^3/s (55.2 m^3/s) about Jan. 16, 1974, gage height, 9.10 ft (2.774 m), from high-water mark in well, from rating curve extended above 240 ft^3/s (6.80 m^3/s); minimum daily, 0.07 ft^3/s (0.002 m^3/s) July 11, 12, 1973; minimum gage height, 1.69 ft (0.515 m) July 7, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 408 ft^3/s (11.6 m^3/s) Apr. 5, gage height, 5.35 ft (1.631 m); minimum, 1.1 ft^3/s (0.031 m^3/s) July 31, gage height, 2.21 ft (0.0674 m).

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	13	7.3	15	12	22	250	57	14	4.7	1.4	3.3
2	4.5	11	11	14	11	21	200	61	14	5.6	3.3	3.0
3	5.2	9.9	54	14	10	21	213	67	12	5.4	16	2.7
4	6.4	11	45	14	9.0	20	280	59	12	4.9	20	2.8
5	5.6	10	25	15	7.0	19	316	53	12	4.7	8.7	2.8
6	7.3	10	18	15	7.0	19	330	50	12	4.4	6.7	2.8
7	6.8	12	17	14	7.4	20	284	43	11	4.2	9.8	2.9
8	6.8	11	16	14	7.6	20	312	39	11	4.4	8.1	2.8
9	6.0	10	16	14	8.0	18	348	36	12	4.7	6.4	3.0
10	6.4	9.4	16	13	8.0	18	345	33	12	4.9	5.8	2.8
11	6.8	7.7	13	13	10	22	270	36	11	4.7	6.4	3.3
12	6.8	7.3	9.9	13	15	24	220	30	11	4.7	5.6	3.2
13	6.8	7.3	8.5	12	18	26	190	27	11	5.1	5.2	3.0
14	6.0	8.1	7.4	12	20	29	190	24	9.8	4.7	5.0	3.0
15	6.4	14	7.6	12	25	33	200	22	8.1	4.7	6.0	3.0
16	6.4	20	7.4	13	60	33	180	21	8.1	4.7	7.0	2.7
17	6.4	13	7.4	14	40	41	160	19	8.4	3.2	8.0	2.8
18	6.0	8.1	7.4	14	25	70	140	18	8.1	2.8	7.0	3.2
19	5.6	8.5	7.4	14	23	107	130	16	7.3	2.5	5.0	3.0
20	5.6	7.7	7.2	13	21	120	120	18	6.7	2.5	4.8	2.9
21	6.0	7.3	7.0	13	20	87	120	18	6.7	2.5	7.0	3.0
22	6.8	7.3	7.2	13	21	77	109	16	7.3	2.2	6.0	3.0
23	6.8	8.1	7.4	14	23	134	95	15	8.4	2.0	5.4	3.0
24	6.4	8.9	8.0	13	26	130	102	16	7.8	2.0	5.0	2.9
25	7.7	9.4	10	12	29	160	102	16	6.7	2.2	8.0	3.1
26	9.4	9.9	84	12	28	210	87	14	6.1	1.8	12	3.0
27	12	8.9	60	13	26	170	77	13	5.8	1.4	14	3.0
28	14	8.1	36	13	25	180	71	13	5.4	1.4	10	3.0
29	15	7.3	35	13	24	170	65	13	5.1	1.3	8.0	3.0
30	15	6.7	53	13	---	180	60	13	4.7	1.5	6.0	3.0
31	15	---	29	12	---	230	---	14	---	1.5	3.5	---
TOTAL	236.4	290.9	645.1	413	566.0	2431	5566	890	275.5	107.3	231.1	89.0
MEAN	7.63	9.70	20.8	13.3	19.5	78.4	186	28.7	9.18	3.46	7.45	2.97
MAX	15	20	84	15	60	230	348	67	14	5.6	20	3.3
MIN	4.5	6.7	7.0	12	7.0	18	60	13	4.7	1.3	1.4	2.7
CFSM	.08	.10	.21	.13	.20	.78	1.86	.29	.09	.03	.07	.03
IN.	.09	.11	.24	.15	.21	.91	2.07	.33	.10	.04	.09	.03
AC-FT	469	577	1280	819	1120	4820	11040	1770	546	213	458	177

CAL YR 1975 TOTAL 29441.2 MEAN 80.7 MAX 1620 MIN 3.0 CFSM .81 IN 10.96 AC-FT 58400
WTR YR 1976 TOTAL 11741.3 MEAN 32.1 MAX 348 MIN 1.3 CFSM .32 IN 4.37 AC-FT 23290

12433200 CHAMOKANE CREEK BELOW FALLS, NEAR LONG LAKE, WA

LOCATION.--Lat 47°51'42", long 117°51'28", in SE¼SW¼ sec.2, T.27 N., R.39 E., Stevens County, Hydrologic Unit 17010307, Spokane Indian Reservation, on right bank 800 ft (244 m) downstream from Chamokane Falls, 1.4 mi (2.3 km) upstream from mouth, and 1.8 mi (2.9 km) north of town of Long Lake.

DRAINAGE AREA.--179 mi^2 (464 km^2).

PERIOD OF RECORD.--February 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,418.5 ft (432.36 m) above mean sea level.

REMARKS.--Records good. No known regulation. Diversions upstream for irrigation, domestic use, and fish hatchery.

AVERAGE DISCHARGE.--5 years, 79.5 ft^3/s (2.251 m^3/s), 6.04 in/yr (153 mm/yr), 57,600 acre-ft/yr (71.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,200 ft^3/s (62.3 m^3/s) Apr. 25, 1975, gage height, 5.06 ft (1.542 m), from rating curve extended above 500 ft^3/s (14.2 m^3/s) on basis of slope-area measurement of peak flow; minimum, 16 ft^3/s (0.45 m^3/s) July 10, 1973, gage height, 0.87 ft (0.265 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft^3/s (8.50 m^3/s) and maximum discharge, 316 ft^3/s (8.95 m^3/s) Apr. 9, gage height, 2.15 ft (0.655 m); minimum, 27 ft^3/s (0.76 m^3/s) July 17, 19, 22-28, 31, gage height, 1.03 ft (0.314 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	42	36	52	43	52	275	99	45	33	30	30
2	38	42	42	50	43	49	239	101	44	32	36	31
3	39	41	62	50	42	45	221	110	43	31	34	30
4	41	39	80	52	38	45	251	104	42	31	34	29
5	39	39	58	50	34	44	272	97	41	30	32	29
6	41	42	50	48	35	47	287	93	40	30	37	30
7	39	44	48	47	36	48	272	86	39	30	37	30
8	39	42	48	47	38	48	284	80	40	31	34	29
9	38	41	50	45	39	50	302	76	43	30	32	29
10	39	41	50	45	39	52	296	73	41	30	33	29
11	39	38	48	45	39	53	266	75	39	31	30	30
12	39	38	45	45	45	52	242	69	38	31	31	30
13	39	39	44	42	47	56	220	63	38	30	30	29
14	39	39	39	42	49	60	225	60	36	30	31	29
15	39	41	39	43	48	60	231	58	36	29	32	30
16	39	44	39	44	85	64	211	56	38	30	31	29
17	39	44	38	47	63	70	183	53	37	29	30	30
18	38	41	38	48	57	86	167	50	36	29	30	30
19	38	38	38	47	55	111	160	50	34	29	30	30
20	38	38	37	46	52	126	164	55	34	29	31	29
21	39	37	37	43	49	110	170	54	34	29	30	29
22	39	37	37	44	50	106	153	50	34	28	30	29
23	39	39	38	45	51	121	142	48	34	28	30	30
24	39	41	39	44	52	155	136	48	34	28	30	30
25	47	39	38	43	67	166	144	48	34	28	34	29
26	44	45	86	42	66	215	131	46	34	28	32	30
27	44	42	108	43	62	192	122	44	33	28	31	31
28	45	38	71	43	58	209	115	44	32	28	30	30
29	45	37	63	44	56	195	110	43	30	29	30	30
30	45	37	62	44	---	212	104	43	30	29	30	30
31	44	---	67	44	---	263	---	44	---	29	30	---
TOTAL	1248	1205	1575	1414	1438	3162	6095	2020	1113	917	982	890
MEAN	40.3	40.2	50.8	45.6	49.6	102	203	65.2	37.1	29.6	31.7	29.7
MAX	47	45	108	52	85	263	302	110	45	33	37	31
MIN	38	37	36	42	34	44	104	43	30	28	30	29
CFSM	.23	.22	.28	.25	.28	.57	1.13	.36	.21	.17	.18	.17
IN.	.26	.25	.33	.29	.30	.66	1.27	.42	.23	.19	.20	.18
AC-FT	2480	2390	3120	2800	2850	6270	12090	4010	2210	1820	1950	1770

CAL YR 1975 TOTAL 41321 MEAN 113 MAX 1430 MIN 34 CFSM .63 IN 8.59 AC-FT 81960
WTR YR 1976 TOTAL 22059 MEAN 60.3 MAX 302 MIN 28 CFSM .34 IN 4.58 AC-FT 43750

12433790 SANPOIL RIVER ABOVE GRANITE CREEK NEAR REPUBLIC, WA

LOCATION.--Lat 48°39'04", long 118°42'16", in NW¼NE¼ sec.5, T.36 N., R.33 E., Ferry County, Hydrologic Unit 17020004, just upstream from unnamed tributary 1.5 mi (2.4 km) east of Republic and 1.7 mi (2.7 km) upstream from Granite Creek.

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)
OCT										
22...	1530	4.3	230	7.1	5.7	33	1	11.3	B100	<5
29...	1525	5.2	230	7.0	5.1	29	1	10.7	B200	B4
NOV										
12...	1500	5.8	230	7.9	1.1	25	4	13.0	--	B4
19...	1510	3.9	250	7.9	.9	33	3	12.4	110	<2
DEC										
10...	1430	5.5	230	7.7	2.6	29	7	13.0	>150	B6
18...	0740	4.1	250	7.9	.4	25	2	12.6	B170	B10
JAN										
07...	1520	4.8	250	7.3	.2	21	1	12.2	62	B10
21...	1345	3.4	250	7.8	1.0	21	2	13.2	B20	<2
FEB										
04...	1310	2.4	260	7.2	1.4	17	4	12.4	B20	B24
25...	1415	4.3	290	7.9	3.1	43	9	12.7	>14	B6
MAR										
10...	1515	7.2	220	7.5	1.1	83	26	12.1	>160	110
24...	1525	18	230	7.7	4.1	54	12	11.5	B80	B30
APR										
14...	1450	21	210	8.0	6.1	46	7	11.4	260	>160
28...	1450	14	213	8.2	9.1	13	6	10.5	B40	4
MAY										
12...	1435	61	153	7.9	10.3	65	9	11.1	52	B22
26...	1500	56	142	8.0	11.8	55	8	10.0	B150	78
JUN										
09...	1455	82	120	7.9	12.7	95	15	10.0	B220	120
23...	1415	36	140	8.0	11.9	55	5	10.5	>140	100
JUL										
14...	1455	8.8	187	8.0	16.4	37	2	9.6	B75	B18
28...	1425	3.4	205	8.1	16.7	25	1	9.1	640	B14
AUG										
11...	1430	7.4	215	8.0	16.7	54	1	9.6	330	62
25...	1505	23	191	8.0	13.5	70	30	9.3	--	B600
SEP										
15...	1450	5.2	235	8.0	13.5	38	2	9.6	<200	<10
22...	1525	4.1	259	8.2	13.7	46	3	9.6	<2	<2

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT									
22...	.03	.06	.05	.04	0	2	3	.0	0
29...	.06	.03	.05	.03	2	2	3	.0	2
NOV									
12...	.09	.04	.05	.02	0	2	3	.0	0
19...	.11	.04	.05	.04	0	1	3	.0	0
DEC									
10...	.15	.05	.06	.03	0	3	2	.0	0
18...	.18	.04	.05	.04	0	3	6	.0	0
JAN									
07...	.20	.05	.05	.04	0	1	4	.0	0
21...	.22	.04	.08	.05	0	3	2	.0	0
FEB									
04...	.46	.04	.06	.04	0	1	3	.0	0
25...	.34	.29	.19	.11	0	2	6	.0	0
MAR									
10...	.26	.48	.38	.30	0	7	6	.0	0
24...	.23	.25	.22	.10	10	1	3	.0	0
APR									
14...	.11	.05	.10	.03	0	1	2	.0	0
28...	.08	.05	.08	.02	0	2	1	.0	0
MAY									
12...	.04	.04	.10	.02	0	1	6	.0	0
26...	.02	.05	.08	.01	0	0	4	.0	0
JUN									
09...	.02	.06	.12	.02	0	0	3	.1	0
23...	.03	.06	.06	.01	0	1	2	.0	0
JUL									
14...	.01	.05	.06	.05	0	1	4	.0	0
28...	.03	.04	.05	.04	0	3	7	.0	0
AUG									
11...	.03	.07	.08	.06	0	1	6	.0	0
25...	.01	.10	.39	.05	0	1	8	.0	0
SEP									
15...	.02	.05	.08	.06	0	1	4	.0	10
22...	.02	.06	.08	.06	0	1	3	.0	0

B Results based upon colony counts outside the ideal range.

12433810 SANPOIL RIVER BELOW GRANITE CREEK NEAR REPUBLIC, WA

LOCATION.--Lat 48°36'58", long 118°43'43", in SE¼NW¼ sec.18, T.36 N., R.33 E., Ferry County, Hydrologic Unit 17020004, at private road bridge 0.8 mi (1.3 km) downstream from Granite Creek and 1.8 mi (2.9 km) south of Republic.

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
22...	1600	59	280	7.8	6.3	38	3	11.5	B1000	B5
29...	1545	17	280	7.1	4.9	50	3	10.8	4800	B26
NOV										
12...	1510	16	290	7.8	2.1	25	3	12.6	--	B38
19...	1540	6.8	300	7.8	1.0	38	4	11.7	B40	B10
DEC										
10...	1440	17	250	7.7	1.7	29	4	12.7	>60	B2
18...	0800	10	290	7.8	.2	25	4	11.8	B50	B6
JAN										
07...	1550	11	290	7.2	.3	25	5	12.4	B30	B8
FEB										
04...	1325	5.6	270	7.2	1.5	17	4	12.5	B14	B14
25...	1435	6.0	240	7.7	2.2	22	3	12.1	>18	B16
MAR										
10...	1535	24	260	7.3	1.9	108	29	11.6	>160	>160
24...	1550	35	290	7.6	3.8	54	10	11.4	B30	<5
APR										
14...	1510	95	215	7.8	5.8	55	10	11.2	B22	14
28...	1510	70	210	8.0	8.2	46	6	11.2	140	92
MAY										
12...	1500	--	161	7.7	11.5	75	8	10.9	B36	18
26...	1520	91	168	7.7	13.4	65	8	10.2	>72	60
JUN										
09...	1515	138	142	7.7	16.0	110	15	9.4	B550	440
23...	1435	63	165	7.8	14.3	55	6	10.2	>90	B24
JUL										
14...	1515	28	218	8.0	18.6	42	4	9.4	B230	100
28...	1445	8.0	250	8.1	19.5	33	2	9.6	B200	58
AUG										
11...	1505	29	234	8.0	18.5	63	2	10.0	B750	B170
25...	1535	38	233	7.9	14.7	54	11	8.6	B200	560
SEP										
15...	1520	15	260	8.1	14.6	38	2	10.1	B200	<10
22...	1545	12	275	8.2	14.8	33	3	10.2	<2	<2

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT									
22...	.07	.05	.07	.05	0	1	3	.0	0
29...	.08	.04	.07	.05	0	4	7	.0	2
NOV									
12...	.16	.06	.06	.04	0	2	3	.0	0
19...	.20	.06	.06	.05	0	1	4	.0	0
DEC									
10...	.22	.05	.07	.04	0	3	2	.0	0
18...	.32	.06	.06	.04	0	2	4	.1	0
JAN									
07...	.32	.05	.08	.05	0	1	3	.0	0
FEB									
04...	.22	.04	.06	.04	0	0	3	.0	0
25...	.24	.05	.07	.07	0	3	5	.0	0
MAR									
10...	.35	.97	.38	.23	0	4	6	.0	10
24...	.31	.18	.16	.06	0	1	2	.0	0
APR									
14...	.16	.09	.09	.02	0	1	2	.0	0
28...	.08	.07	.07	.02	0	1	1	.0	0
MAY									
12...	.05	.05	.09	.01	0	1	5	.0	0
26...	.03	.05	.08	.02	0	0	4	.0	0
JUN									
09...	.02	.10	.12	.03	0	10	10	.0	0
23...	.03	.06	.08	.02	0	1	2	.0	0
JUL									
14...	.02	.07	.09	.06	10	1	3	.0	0
28...	.06	.07	.09	.05	0	3	7	.0	0
AUG									
11...	.03	.09	.09	.07	0	1	5	.0	0
25...	.01	.07	.15	.07	10	1	8	.0	0
SEP									
15...	.01	.05	.08	.05	0	1	6	.0	0
22...	.01	.06	.08	.06	0	2	8	.0	0

B Results based upon colony counts outside the ideal range.

12434590 SANPOIL RIVER ABOVE JACK CREEK AT KELLER, WA

LOCATION.--Lat 48°05'04", long 118°41'25", in NW¼SW¼ sec.20, T.30 N., R.33 E., Ferry County, Hydrologic Unit 17020004, at road bridge 0.4 mi (0.6 km) upstream from Jack Creek, 0.5 mi (0.8 km) northwest of Keller, 2.4 mi (3.9 km) downstream from gaging station, and at mile 11.7 (18.8 km).

DRAINAGE AREA.--About 889 mi^2 (2,303 km^2).

PERIOD OF RECORD.--Water years 1960-1966 (partial-record station published as 12435000), 1972 (published as 12434500), 1975 to September 1976 (discontinued).

COOPERATION.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

REMARKS.--Water temperature records collected July 1968 to September 1970, at gaging station 2.4 mi (3.9 km) upstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
22...	1755	252	210	8.1	8.0	25	3	11.5	<20	<5
29...	1710	109	230	7.5	6.4	21	2	11.4	B300	B26
NOV										
13...	0740	117	220	7.9	.3	13	2	13.4	B120	B12
20...	0730	109	220	7.9	.0	21	3	14.0	B30	B8
DEC										
10...	1620	114	200	7.6	2.9	17	3	12.7	B20	B4
18...	0900	190	270	8.1	.0	17	2	14.2	B60	<2
JAN										
08...	0815	125	210	7.2	.2	17	2	13.6	B32	B6
22...	0810	117	210	7.9	.3	17	2	13.9	B14	<2
FEB										
26...	0745	131	200	7.7	1.1	17	3	12.9	B12	B2
MAR										
11...	0750	117	210	7.9	1.9	13	3	--	B80	B2
25...	0730	298	180	7.4	2.2	38	11	12.7	B200	<10
APR										
15...	0720	995	130	7.8	4.8	42	15	11.7	B150	6
29...	0830	725	133	7.8	6.3	55	10	12.1	110	10
MAY										
13...	0815	--	123	7.7	10.0	60	10	10.9	B100	12
27...	0900	444	142	7.4	12.3	42	7	10.3	B600	8
JUN										
10...	0720	376	150	7.7	13.3	38	8	9.7	B1200	B28
24...	0720	252	170	7.8	11.7	25	5	10.3	B100	B26
JUL										
15...	0715	123	192	8.0	15.3	21	2	9.3	B220	B12
29...	0725	69	210	8.2	18.2	13	1	6.9	B100	B26
AUG										
12...	0730	99	203	8.0	16.5	25	2	9.3	B500	B16
26...	0700	--	209	8.0	11.8	21	3	9.8	B760	38
SEP										
16...	0635	58	210	8.1	13.0	21	2	9.3	B250	42
23...	0655	52	219	8.1	14.0	13	1	9.2	B300	B15

B Results based upon colony counts outside the ideal range.

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT									
22...	.02	.06	.05	.03	0	2	3	.2	0
29...	.06	.04	.04	.03	0	2	4	.0	0
NOV									
13...	.01	.05	.03	.02	0	1	3	.0	0
20...	.03	.04	.03	.02	0	1	3	.0	0
DEC									
10...	.03	.03	.03	.02	0	2	4	.0	0
18...	.03	.02	.03	.02	0	1	4	.1	0
JAN									
08...	.06	.02	.03	.02	0	1	4	.0	0
22...	.06	.02	.03	.02	0	6	4	.0	0
FEB									
26...	.01	.06	.03	.02	0	2	4	.0	10
MAR									
11...	.02	.02	.04	.02	0	1	2	.0	0
25...	.10	.09	.11	.03	0	1	0	.0	0
APR									
15...	.06	.06	.11	.02	0	0	0	.0	0
29...	.02	.06	.06	.01	0	1	0	.0	0
MAY									
13...	.01	.05	.07	.01	0	2	5	.3	0
27...	.03	.05	.06	.02	0	4	6	.0	0
JUN									
10...	.02	.04	.08	.02	0	7	4	.0	0
24...	.01	.05	.06	.02	0	1	2	.0	0
JUL									
15...	.00	.04	.05	.03	10	1	2	.0	0
29...	.08	.04	.04	.03	0	3	3	.0	0
AUG									
12...	.00	.06	.04	.03	0	2	3	.0	0
26...	.01	.01	.04	.03	50	--	--	.0	--
SEP									
16...	.01	.05	.03	.02	0	2	3	.0	0
23...	.00	.02	.04	.02	0	1	3	.0	0

12435500 FEEDER CANAL AT GRAND COULEE, WA

LOCATION.--Lat 47°57'05", long 118°59'40", on line between secs.1 and 2, T.28 N., R.30 E., Grant County, Hydrologic Unit 17020001, on left bank at Grand Coulee, 0.2 mi (0.3 km) downstream from intake and 0.5 mi (0.8 km) southwest of Grand Coulee Dam.

PERIOD OF RECORD.--October 1951 to current year.--

GAGE.--Water-stage recorder. Datum of gage is 1,550.0 ft (472.44 m) above mean sea level, Bureau of Reclamation datum, adjustment of 1937.

REMARKS.--Records excellent. Water is pumped (beginning May 1951) from Franklin D. Roosevelt Lake behind Grand Coulee Dam, through a lift of about 280 ft (85 m) into feeder canal for a distance of 2 mi (3.2 km) into Banks Lake (formerly called equalizing reservoir). From Banks Lake it is distributed through a system of canals to the Columbia Basin project. Daily discharge computed from pump rating and head. On December 23, 1974, two pump generators (Nos. 7 and 8) were put into operation; these are used to generate power during peak power demand periods in winter months by utilizing the water stored in Banks Lake and returning it back into Franklin D. Roosevelt Lake. Water will be pumped into Banks Lake during periods of low power demand.

COOPERATION.--Discharge records furnished by Bureau of Reclamation; records reviewed and pump discharge checked with discharge measurements by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 12,500 ft^3/s (354 m^3/s) July 30, 1974; minimum daily discharge 1,920 ft^3/s (54.4 m^3/s) Feb. 24, 1975, reverse flow from Banks Lake.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 11,000 ft^3/s (312 m^3/s) June 2, 3; minimum daily discharge, 1,750 ft^3/s (49.6 m^3/s) Mar. 3, reverse flow from Banks Lake.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	215	-1230	1720	7160	10900	8290	6170	3210
2			0	0	-138	-1140	1810	7180	11000	8300	5140	3210
3			0	0	-121	-1750	3810	7200	11000	8310	5140	3210
4			0	0	305	-1280	3810	6920	9500	8310	5140	4340
5			0	0	-937	-69	2860	7230	7990	8320	5140	5150
6			0	0	-1280	1560	2540	7250	8000	8320	5290	5150
7			0	0	1900	4160	2530	7250	8010	8320	6740	5160
8			0	0	1840	364	2530	7250	6130	8310	6740	5660
9			1210	0	-544	-222	2530	7260	6380	8310	6200	5550
10			5270	0	-69	-252	2540	7330	8050	8310	5140	5820
11			6410	0	-68	-225	2560	7450	8070	7980	5140	6730
12			4340	0	-52	-420	2550	7630	8100	6730	5140	6720
13			0	0	-48	462	644	7750	8130	6680	5260	5520
14			0	0	-110	2030	0	7900	7110	6730	6740	4390
15			0	0	642	1120	0	8020	6610	6730	6740	3520
16			342	0	204	150	0	8140	6620	6730	6210	3480
17			6470	0	-807	-264	0	8810	6640	6720	5140	3520
18			5380	0	-772	-81	0	8410	6660	6720	5140	3510
19			3230	-34	-51	400	0	8450	6670	6720	5140	3510
20			3230	-287	-75	4760	0	8540	6690	6720	5140	3510
21			3220	-267	-75	5290	0	8580	6710	6730	5150	3510
22			3210	14	93	1270	0	8700	6710	6740	5150	3510
23			3210	-783	-78	0	0	8760	6210	6560	5150	3520
24			4970	-373	-393	-359	0	8830	6710	8090	5160	3520
25			6400	2090	-55	-422	0	8890	7430	8330	5140	3530
26			6400	883	-161	-299	0	9590	8300	8330	5150	3710
27			6400	0	-415	4370	0	10000	8300	8330	5410	5140
28			6410	121	1770	4360	2100	10800	8300	8330	7370	4790
29			6400	121	661	2400	4660	10800	8290	8330	4270	5130
30			6400	-647	---	1800	6620	10900	8290	8330	3200	5120
31		---	2070	-57	---	1730	---	10900	---	7130	3200	---
TOTAL	0	0	90972	781	1381	28213	45814	259880	233510	236790	166980	132350
MEAN	0	0	2935	25.2	47.6	910	1527	8383	7784	7638	5386	4412
MAX	0	0	6470	2090	1900	5290	6620	10900	11000	8330	7370	6730
MIN	0	0	0	-783	-1280	-1750	0	6920	6130	6560	3200	3210
AC-FT	0	0	180400	1550	2740	55960	90870	515500	463200	469700	331200	262500

CAL YR 1975 TOTAL 1078484.00 MEAN 2955 MAX 9640 MIN -1920 AC-FT 2139000
WTR YR 1976 TOTAL 1196671.00 MEAN 3270 MAX 11000 MIN -1750 AC-FT 2374000

12436000 FRANKLIN D. ROOSEVELT LAKE AT GRAND COULEE DAM, WA

LOCATION.--Lat 47°57'20", long 118°59'02", near center of sec.1, T.28 N., R.30 E., Grant County, Hydrologic Unit 17020001, in block 12 of Grand Coulee Dam on Columbia River, and at mile 596.6 (959.9 km).

DRAINAGE AREA.--74,700 mi² (193,500 km²) approximately.

PERIOD OF RECORD.--April 1938 to current year. Prior to October 1943, published as Columbia River Reservoir at Grand Coulee Dam.

REVISED RECORDS.--WSP 1286: 1942, 1945(M). WSP 1316: 1942 (May monthend contents). WSP 1933: Drainage area.

CORRECTIONS.--WRD Wash. 1973: 1965, 1967. WDR WA-75-1: 1974 monthend contents.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level, Bureau of Reclamation datum, adjustment of 1937, or 1.425 ft (0.434 m) above mean sea level (levels by Bureau of Reclamation). Prior to Apr. 24, 1942, nonrecording gage at site 2,000 ft (610 m) upstream at same datum.

REMARKS.--Reservoir is formed by concrete dam; construction of dam began in 1934; completed in 1941; storage began early in construction period. Capacity, 5,022,179 acre-ft (6,190 hm³) between elevations, 1,208 ft (368.2 m), proposed lower limit of operation, and 1,288 ft (392.6 m), top of gates. Capacity increased to 5,185,452 acre-ft (6,390 hm³) by use of 2 ft (0.6 m) flashboards installed after high-water period each year beginning August 1961. Storage below 1,208 ft (368.2 m), 4,209,207 acre-ft (5,190 hm³). Figures given herein represent total contents. Water is used for power development and irrigation. Flow is regulated by nine major reservoirs and numerous smaller reservoirs and powerplants. Diversions by Feeder Canal (see (12435500) and for irrigation of about 350,000 acres (141,700 hm²) in the United States plus an additional 37,000 acres (15,000 hm²) in Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents recorded, 9,586,200 acre-ft (11,800 hm³) July 17, 1942, June 3, 1945, elevation, 1,290.3 ft (393.28 m); maximum elevation, 1,290.36 ft (393.302 m), Aug. 6, 1976; minimum contents observed, 16,200 acre-ft (20.0 hm³) Aug. 29, 1938, elevation 956.1 ft (291.42 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,424,321 acre-ft (11,600 hm³) Aug. 6, elevation, 1,290.36 ft (393.302 m); minimum, 4,669,560 acre-ft (5,760 hm³) Apr. 27, elevation, 1,217.72 ft (371.161 m).

Capacity table dated October 24, 1975 (elevation, in feet, and contents, in acre-feet)
(Prepared by Geological Survey from data furnished by Bureau of Reclamation)

1,210.0	4,301,035	1,270.0	7,864,082
1,230.0	5,308,657	1,291.0	9,477,261
1,250.0	6,501,603		

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1286.48	1285.41	1285.64	1289.87	1288.50	1263.97	1230.54	1219.50	1271.84	1288.23	1290.11	1290.08
2	1286.31	1286.06	1286.50	1289.91	1288.11	1262.07	1229.85	1219.84	1272.79	1288.68	1290.12	1290.07
3	1286.54	1286.62	1287.66	1289.97	1287.68	1260.45	1230.20	1220.16	1273.62	1288.92	1290.11	1290.06
4	1287.14	1287.34	1288.36	1289.66	1286.83	1259.08	1230.47	1220.36	1274.50	1289.09	1290.11	1289.98
5	1287.70	1287.61	1288.84	1289.53	1286.07	1257.62	1230.37	1220.66	1275.15	1289.19	1289.95	1289.84
6	1287.59	1287.72	1289.71	1289.11	1285.22	1255.99	1229.78	1220.81	1275.59	1289.18	1290.29	1290.24
7	1287.60	1288.03	1289.98	1288.80	1284.35	1254.33	1229.91	1220.83	1276.14	1289.15	1290.00	1289.99
8	1287.75	1288.15	1289.91	1288.30	1283.58	1252.67	1229.47	1220.85	1276.89	1289.10	1290.16	1290.04
9	1287.85	1288.54	1289.98	1287.91	1283.12	1250.93	1229.97	1221.29	1277.62	1289.17	1290.12	1290.01
10	1288.21	1288.66	1289.73	1287.45	1282.93	1249.44	1230.91	1222.74	1278.40	1289.28	1290.09	1289.83
11	1288.50	1288.93	1289.76	1287.42	1282.56	1248.26	1231.17	1225.82	1279.46	1289.57	1289.97	1289.20
12	1289.13	1288.99	1289.80	1287.46	1282.25	1247.03	1230.24	1228.80	1280.52	1289.80	1290.02	1288.43
13	1289.06	1288.41	1289.63	1287.64	1282.45	1246.01	1228.77	1231.51	1281.77	1289.76	1289.95	1287.86
14	1288.83	1287.82	1289.53	1287.66	1282.61	1244.72	1227.68	1234.24	1282.81	1289.56	1290.09	1287.75
15	1288.89	1287.48	1289.45	1287.77	1282.55	1243.47	1226.54	1237.24	1283.47	1289.24	1290.06	1287.52
16	1288.94	1287.45	1289.30	1288.20	1281.88	1242.31	1225.00	1240.00	1284.27	1289.03	1290.05	1287.43
17	1288.63	1287.29	1289.07	1288.84	1280.81	1241.23	1223.45	1242.86	1285.10	1288.88	1290.08	1286.79
18	1288.86	1287.28	1288.75	1289.49	1279.60	1240.15	1222.34	1245.59	1286.00	1288.81	1290.01	1286.44
19	1289.12	1287.27	1288.40	1289.73	1278.48	1238.96	1221.56	1248.13	1286.84	1288.73	1289.97	1286.54
20	1288.65	1287.28	1287.95	1289.67	1277.60	1237.59	1220.76	1250.70	1287.78	1288.91	1289.95	1286.67
21	1287.96	1287.24	1287.31	1289.64	1276.87	1236.55	1220.30	1253.15	1288.14	1289.31	1290.01	1286.52
22	1287.09	1286.87	1287.02	1289.66	1275.76	1235.75	1219.93	1255.21	1288.15	1289.40	1289.89	1286.63
23	1286.28	1286.74	1286.85	1289.80	1274.11	1235.19	1219.39	1257.25	1288.20	1289.49	1289.90	1287.21
24	1285.78	1286.45	1286.83	1289.70	1272.56	1234.60	1218.80	1259.27	1288.12	1289.67	1289.71	1287.60
25	1285.43	1286.02	1287.49	1289.45	1271.08	1234.24	1218.41	1261.39	1288.27	1289.91	1289.81	1288.31
26	1285.69	1285.74	1287.91	1289.29	1269.56	1234.10	1217.84	1263.13	1288.41	1290.14	1289.94	1289.10
27	1285.93	1285.82	1289.01	1289.02	1268.16	1233.98	1217.87	1264.65	1288.29	1290.03	1290.07	1288.86
28	1285.80	1285.75	1289.58	1288.64	1266.69	1233.63	1218.23	1266.27	1288.11	1289.98	1289.92	1288.51
29	1285.48	1285.53	1289.67	1288.65	1265.31	1232.91	1218.60	1267.93	1288.78	1289.87	1290.10	1288.34
30	1285.26	1285.40	1289.95	1288.60	---	1232.19	1219.04	1269.36	1287.75	1289.88	1289.89	1288.29
31	1285.13	---	1289.88	1288.55	---	1231.39	---	1270.60	---	1290.11	1290.04	---
MEAN	1287.34	1287.13	1288.69	1288.88	1279.56	1244.22	1224.91	1241.29	1282.43	1289.36	1290.02	1288.47
MAX	1289.13	1288.99	1289.98	1289.97	1288.50	1263.97	1231.17	1270.60	1288.78	1290.14	1290.29	1290.24
MIN	1285.13	1285.40	1285.64	1287.42	1265.31	1231.39	1217.84	1219.50	1271.84	1288.23	1289.71	1286.44
†	9,001,555	9,022,954	9,384,790	9,276,030	7,530,642	5,385,609	4,734,923	7,907,346	9,211,157	9,403,713	9,397,950	9,254,901
‡	-122,673	+21,399	+361,836	-108,760	-1,745,388	-2,145,033	-650,686	+3,172,423	+1,303,811	+192,566	-5,763	-143,049

CAL YR 1975:.................‡ +222,823
WTR YR 1976:.................‡ +130,673

† Total contents, in acre feet, at end of month.
‡ Change in contents.

COLUMBIA RIVER MAIN STEM

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WA

LOCATION.--Lat 47°57'56", long 118°58'54", in SW¼SE¼ sec.36, T.29 N., R.30 E., Douglas County, Hydrologic Unit 17020005, in pier 3 on west side of bridge on State Highway 155, 3,200 ft (975 m) downstream from Grand Coulee Dam, 14.2 mi (22.8 km) upstream from Nespelem River, and at mile 596.3 (959.4 km).

DRAINAGE AREA.--74,700 mi^2 (193,500 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1913 to June 1923 (monthly discharge only), July to December 1923, January 1924 to May 1928 (monthly discharge only), June 1928 to current year. Published as "at Grand Coulee near Nespelem" prior to 1936 and as "at Grand Coulee" 1936-42.

REVISED RECORDS.--WSP 1286: 1942, 1947. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level, Bureau of Reclamation datum, adjustment of 1937. June 27 to Dec. 31, 1923, June 12, 1928, to Mar. 31, 1931, nonrecording gage at site 0.5 mi (0.8 km) upstream at datum 2.4 ft (0.7 m) lower. Apr. 1, 1931, to Dec. 31, 1935, water-stage recorder at site 850 ft (259 m) downstream at present datum. Since June 12, 1955, auxiliary water-stage recorder 5.3 mi (8.5 km) downstream from base gage at datum 1.42 ft (0.433 m) lower.

REMARKS.--Water discharge records good. Flow is regulated by nine major reservoirs and numerous smaller reservoirs and powerplants. Diversions by Feeder Canal for Columbia Basin project (see sta 12435500) and for irrigation of about 380,000 acres (1,540 km^2) in the United States and an additional 35,000 acres (142 km^2) in Canada

AVERAGE DISCHARGE.--63 years, 110,900 ft^3/s (3,141 m^3/s), 80,350,000 acre-ft/yr (99,100 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 637,800 ft^3/s (18,100 m^3/s) June 12, 1948, elevation, 987.90 ft (301.112 m); minimum, 14,900 ft^3/s (422 m^3/s) Dec. 17, 1956, elevation, 934.37 ft (284.796 m); minimum daily, 15,300 ft^{3}s (433 m^3/s) Feb. 1, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a discharge of 725,000 ft^3/s (20,500 m^3/s), estimated.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge,227,000 ft^3/s (6,430 m^3/s) July 19; maximum elevation, 968.55 ft (295.214 m) Aug. 17; minimum daily discharge, 36,300 ft^3/s (1,030 m^3/s) Oct. 4; minimum elevation, 944.44 ft (287.865 m) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81000	86700	92200	113000	112000	155000	137000	136000	164000	140000	171000	135000
2	74400	69500	68600	108000	123000	158000	133000	135000	159000	138000	198000	147000
3	62500	83600	54700	110000	132000	150000	95100	134000	151000	141000	217000	151000
4	36300	73100	68400	116000	140000	157000	90300	137000	148000	140000	218000	149000
5	45500	82300	81500	109000	144000	157000	107000	137000	145000	140000	220000	137000
6	72600	94300	64100	109000	143000	157000	126000	142000	146000	138000	200000	147000
7	76700	85700	95000	107000	143000	153000	98000	156000	137000	138000	202000	214000
8	75000	91400	101000	109000	145000	150000	104000	175000	133000	138000	164000	192000
9	73400	83300	87700	108000	145000	150000	77000	187000	139000	137000	187000	176000
10	65300	78700	102000	109000	144000	144000	63900	187000	145000	138000	198000	146000
11	57200	70900	87800	109000	147000	138000	91300	170000	136000	138000	203000	124000
12	41300	76600	88700	110000	145000	134000	136000	157000	128000	141000	181000	125000
13	74900	104000	102000	110000	125000	130000	155000	157000	126000	161000	166000	133000
14	82700	106000	106000	113000	117000	125000	160000	157000	128000	174000	137000	117000
15	75300	97900	111000	113000	120000	125000	165000	157000	133000	182000	149000	115000
16	79100	89900	117000	109000	134000	127000	174000	158000	133000	190000	170000	95300
17	86300	107000	114000	99100	139000	130000	171000	161000	132000	208000	202000	107000
18	57900	112000	111000	99500	150000	130000	155000	167000	133000	225000	223000	91400
19	56900	111000	114000	116000	144000	130000	147000	161000	134000	227000	212000	75000
20	86100	106000	118000	127000	136000	131000	142000	154000	139000	215000	189000	98000
21	94100	111000	118000	127000	122000	131000	137000	160000	159000	202000	176000	116000
22	100000	112000	118000	123000	133000	131000	132000	166000	166000	191000	170000	109000
23	97900	99200	116000	123000	154000	131000	132000	166000	162000	168000	143000	103000
24	92100	109000	104000	123000	153000	129000	133000	166000	161000	138000	139000	98400
25	85200	111000	95800	122000	150000	128000	133000	166000	155000	131000	139000	73600
26	68100	105000	90000	121000	150000	120000	138000	167000	145000	156000	179000	67500
27	79500	94700	75500	122000	148000	114000	125000	166000	146000	194000	219000	102000
28	89000	102000	80600	122000	149000	119000	140000	164000	147000	200000	210000	107000
29	99600	102000	99300	122000	148000	128000	140000	164000	147000	200000	173000	104000
30	96400	101000	109000	123000	---	132000	138000	164000	146000	171000	191000	96200
31	99300	---	116000	120000	---	136000	---	164000	---	162000	146000	---
TOTAL	2361600	2856800	3006900	3551600	4035000	4230000	3875600	4938000	4323000	5162000	5692000	3651400
MEAN	76180	95230	97000	114600	139100	136500	129200	159300	144100	166500	183600	121700
MAX	100000	112000	118000	127000	154000	158000	174000	187000	166000	227000	223000	214000
MIN	36300	69500	54700	99100	112000	114000	63900	134000	126000	131000	137000	67500
AC-FT	4684000	5666000	5964000	7045000	8003000	8390000	7687000	9795000	8575000	10240000	11290000	7243000

CAL YR 1975 TOTAL 39023000 MEAN 106900 MAX 197000 MIN 36300 AC-FT 77400000
WTR YR 1976 TOTAL 47683900 MEAN 130300 MAX 227000 MIN 36300 AC-FT 94580000

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-58, 1972, 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1950 to September 1958.
pH: November 1950 to September 1953.
WATER TEMPERATURES: November 1950 to September 1958, July 1974 to current year.

INSTRUMENTATION.--Temperature recorder since July 1974.

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data for water-quality samples listed below furnished by Washington State Department of Ecology.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 18.5°C Aug. 28 to Sept. 12, Sept. 20, 21, 1975; minimum, 2.0°C Feb. 10-15, 17-28, Mar.1-13, 19, 20, 1975.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 18.0°C Oct. 9; minimum, 2.5°C Jan. 21, 23-31, Feb. 1-29, Mar. 1, 3, 4, 6, 8-10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT									
22...	1800	110000	140	8.2	21	4	8.5	B100	B2
29...	1845	108000	130	8.5	13	8	8.9	B10	<2
NOV									
13...	0820	108000	140	7.8	8	3	9.2	<5	<2
20...	0825	114000	140	7.9	8	1	9.6	B4	<2
DEC									
10...	1710	112000	150	7.4	13	5	10.6	>20	<2
18...	1010	113000	160	6.7	17	3	11.0	B20	<2
JAN									
08...	0935	110000	160	6.9	17	3	12.2	B2	<2
22...	0900	127000	160	7.7	21	3	13.4	B2	<2
FEB									
05...	0815	143000	150	7.1	13	5	13.4	<2	<2
26...	0900	152000	160	7.7	9	5	13.7	>56	<2
MAR									
11...	0855	140000	160	7.9	8	8	15.3	B15	<2
25...	0845	131000	170	7.6	13	7	13.4	<20	<5
APR									
15...	0820	157000	167	7.8	8	6	15.7	4	<2
29...	0930	144000	158	8.0	38	6	13.2	4	<2
MAY									
13...	0930	160000	153	7.7	13	4	13.4	6	<2
27...	1000	165000	125	7.8	17	9	12.3	B22	2
JUN									
10...	0825	147000	130	7.7	13	4	12.1	66	<2
24...	0815	164000	133	7.8	8	4	12.0	B26	<2
JUL									
15...	0810	179000	129	7.9	17	3	10.4	B64	<2
29...	0815	202000	130	7.9	8	2	9.7	B80	<2
AUG									
12...	0825	177000	130	7.5	21	2	10.4	B600	<2
26...	0810	143000	123	7.8	13	2	9.8	420	<2
SEP									
16...	0745	88600	123	7.9	13	1	10.1	B200	<2
23...	0755	129000	120	8.1	13	1	9.8	B150	<2

B Results based upon colony counts outside the ideal range.

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT									
22...	61	4	19	3.3	1.9	2.6	70	--	57
29...	64	12	19	4.1	2.1	.8	64	--	53
NOV									
13...	67	8	25	1.1	1.8	.9	72	--	59
20...	67	10	19	4.8	1.5	.6	70	--	57
DEC									
10...	68	10	19	5.1	2.3	.9	71	--	58
18...	70	14	21	4.3	2.1	1.5	68	--	56
JAN									
08...	74	12	21	5.2	2.1	1.0	76	--	62
22...	72	6	21	4.8	2.2	1.5	81	--	66
FEB									
05...	72	6	21	4.8	2.0	1.0	81	--	66
26...	74	8	21	5.2	1.8	.9	80	--	66
MAR									
11...	71	6	20	5.0	2.8	1.0	79	--	65
25...	76	5	22	5.1	2.2	1.0	86	--	71
APR									
15...	75	7	21	5.4	2.4	1.0	82	--	67
29...	77	11	22	5.3	2.5	1.1	80	--	66
MAY									
13...	74	11	22	4.7	1.9	.9	77	--	63
27...	58	11	17	3.8	1.6	.8	57	--	47
JUN									
10...	59	5	17	3.9	1.9	.8	65	0	53
24...	60	3	17	4.2	1.6	.8	69	0	57
JUL									
15...	61	6	18	3.8	1.8	.8	66	--	54
29...	63	9	19	3.7	1.8	1.2	66	--	54
AUG									
12...	59	9	18	3.5	3.2	1.2	62	--	51
26...	59	9	18	3.5	2.6	2.1	62	--	51
SEP									
16...	53	4	16	3.1	2.3	.9	60	--	49
23...	53	4	16	3.2	2.3	1.0	60	--	49

DATE	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT									
22...	.7	11	1.3	1.6	.20	.31	.51	.06	.01
29...	.3	11	.9	.37	.04	.12	.16	.03	.02
NOV									
13...	1.8	11	.7	.10	.05	.15	.20	.03	.02
20...	1.4	11	.7	.10	.03	.17	.20	.03	.01
DEC									
10...	4.5	11	1.3	.13	.13	.30	.43	.03	.02
18...	22	14	1.4	.12	.10	.27	.37	.03	.02
JAN									
08...	15	11	1.6	.16	.05	.15	.20	.02	.02
22...	2.6	13	1.5	.15	.08	.23	.31	.04	.02
FEB									
05...	10	14	1.3	.15	.04	.10	.14	.04	.01
26...	2.6	16	.7	.16	.07	.16	.23	.05	.03
MAR									
11...	1.6	14	.8	.17	.05	.17	.22	.05	.04
25...	3.5	14	1.9	.16	.06	.10	.16	.05	.02
APR									
15...	2.1	15	1.4	.16	.04	.20	.24	.05	.01
29...	1.3	15	.7	.10	.05	.21	.26	.05	.00
MAY									
13...	2.5	15	1.8	.04	.03	.18	.21	.05	.00
27...	1.4	9.6	1.0	.03	.05	.21	.26	.04	.01
JUN									
10...	2.1	9.3	.8	.03	.04	.15	.19	.02	.00
24...	1.7	8.9	1.0	.03	.06	.14	.20	.03	.00
JUL									
15...	1.3	11	.9	.01	.09	.14	.23	.02	.01
29...	1.3	10	1.2	.03	.08	.40	.48	.04	.02
AUG									
12...	3.1	11	1.1	.06	.12	.33	.45	.03	.02
26...	1.6	8.7	1.9	.11	.03	.02	.05	.02	.01
SEP									
16...	1.2	7.9	1.3	.06	.06	.10	.16	.01	.01
23...	.8	8.1	.6	.04	.06	--	--	.01	.00

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.5	17.0	17.5	15.5	15.0	15.5	10.0	9.5	10.0	5.5	5.0	5.0
2	17.5	17.0	17.5	15.5	15.0	15.0	10.0	9.5	9.5	5.5	5.0	5.0
3	17.5	17.0	17.0	15.0	15.0	15.0	9.5	9.0	9.5	5.0	5.0	5.0
4	17.5	17.0	17.0	15.0	14.5	15.0	10.0	9.0	9.0	5.0	5.0	5.0
5	17.5	17.0	17.0	15.0	14.5	14.5	9.0	8.5	9.0	5.0	4.5	4.5
6	17.5	17.0	17.5	14.5	14.5	14.5	9.0	8.5	9.0	4.5	4.0	4.5
7	17.5	17.0	17.5	14.5	14.0	14.0	9.5	8.5	9.0	4.5	4.0	4.5
8	17.5	17.0	17.5	14.0	14.0	14.0	9.5	9.0	9.0	4.5	4.5	4.5
9	18.0	17.5	17.5	14.0	14.0	14.0	9.5	8.5	9.0	4.5	3.5	4.0
10	17.5	17.0	17.5	14.0	13.5	14.0	9.0	8.0	8.5	4.0	3.5	4.0
11	17.5	17.0	17.0	13.5	13.5	13.5	8.5	8.0	8.0	4.0	3.5	3.5
12	17.5	17.0	17.5	13.5	13.5	13.5	8.0	7.5	8.0	3.5	3.5	3.5
13	17.5	17.0	17.5	13.5	13.0	13.5	8.0	7.5	8.0	3.5	3.0	3.5
14	17.5	17.0	17.5	13.5	13.0	13.0	8.0	7.5	8.0	3.5	3.5	3.5
15	17.5	17.0	17.5	13.5	12.5	13.0	7.5	7.0	7.5	3.5	3.5	3.5
16	17.5	17.0	17.5	12.5	12.5	12.5	7.5	7.0	7.0	3.5	3.5	3.5
17	17.5	17.0	17.0	12.5	12.5	12.5	7.0	7.0	7.0	3.5	3.0	3.5
18	17.0	17.0	17.0	12.5	12.0	12.5	7.0	6.5	6.5	3.5	3.0	3.0
19	17.0	17.0	17.0	12.5	12.0	12.0	6.5	6.5	6.5	3.0	3.0	3.0
20	17.0	17.0	17.0	12.0	12.0	12.0	6.5	6.0	6.5	3.0	3.0	3.0
21	17.0	16.5	17.0	12.0	11.5	11.5	6.5	6.0	6.5	3.0	2.5	3.0
22	17.0	16.5	16.5	11.5	11.5	11.5	6.5	6.0	6.0	3.0	3.0	3.0
23	17.0	16.5	16.5	11.5	11.0	11.5	6.5	6.5	6.5	3.0	2.5	3.0
24	16.5	16.5	16.5	11.5	11.0	11.0	6.5	6.0	6.5	3.0	2.5	2.5
25	16.5	16.0	16.5	11.0	10.5	11.0	6.0	6.0	6.0	2.5	2.5	2.5
26	16.5	16.0	16.0	11.0	10.5	11.0	6.5	5.5	6.0	3.0	2.5	2.5
27	16.0	16.0	16.0	10.5	10.0	10.5	5.5	5.5	5.5	3.0	2.5	2.5
28	16.0	16.0	16.0	10.5	10.0	10.0	6.0	5.5	5.5	3.0	2.5	2.5
29	16.0	15.5	16.0	10.0	9.5	10.0	6.0	6.0	6.0	3.0	2.5	2.5
30	16.0	15.5	15.5	10.0	9.5	10.0	6.0	5.5	5.5	3.0	2.5	2.5
31	15.5	15.5	15.5	---	---	---	5.5	5.0	5.5	3.0	2.5	2.5
MONTH	18.0	15.5	17.0	15.5	9.5	12.5	10.0	5.0	7.5	5.5	2.5	3.5

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	2.5	2.5	2.5	3.0	2.5	3.0	4.0	3.5	3.5	7.5	7.5	7.5
2	3.0	2.5	2.5	3.0	3.0	3.0	4.0	3.5	3.5	7.5	7.5	7.5
3	3.0	2.5	2.5	3.0	2.5	3.0	4.0	3.5	3.5	7.5	7.5	7.5
4	3.0	2.5	2.5	3.0	2.5	3.0	4.0	3.5	3.5	7.5	7.5	7.5
5	3.0	2.5	2.5	3.0	3.0	3.0	4.0	3.5	4.0	7.5	7.5	7.5
6	3.0	2.5	2.5	3.0	2.5	3.0	4.0	3.5	4.0	8.0	7.5	7.5
7	3.0	2.5	3.0	3.0	3.0	3.0	4.5	4.0	4.0	8.0	7.5	7.5
8	3.0	2.5	3.0	3.0	2.5	3.0	4.5	4.0	4.0	8.0	7.5	8.0
9	3.0	2.5	3.0	3.0	2.5	3.0	4.5	4.0	4.5	8.0	8.0	8.0
10	3.0	2.5	2.5	3.0	2.5	3.0	4.5	4.0	4.5	8.5	8.0	8.5
11	3.0	2.5	2.5	3.0	3.0	3.0	5.0	4.5	5.0	8.5	8.0	8.5
12	3.0	2.5	3.0	3.0	3.0	3.0	5.0	4.5	5.0	8.5	8.5	8.5
13	3.0	2.5	2.5	3.0	3.0	3.0	5.5	5.0	5.0	9.0	8.5	8.5
14	3.0	2.5	2.5	3.0	3.0	3.0	5.5	5.0	5.0	9.0	8.5	8.5
15	3.0	2.5	2.5	3.0	3.0	3.0	5.5	5.0	5.5	9.0	8.5	9.0
16	3.0	2.5	2.5	3.5	3.0	3.0	5.5	5.0	5.5	9.5	9.0	9.0
17	3.0	2.5	2.5	3.5	3.0	3.0	5.5	5.0	5.5	9.5	9.0	9.0
18	3.0	2.5	2.5	3.5	3.0	3.0	5.5	5.5	5.5	9.5	9.0	9.5
19	3.0	2.5	2.5	3.5	3.0	3.0	6.0	5.5	5.5	9.5	9.5	9.5
20	3.0	2.5	2.5	3.5	3.0	3.0	6.0	5.5	5.5	10.0	9.5	9.5
21	3.0	2.5	2.5	3.5	3.0	3.5	6.0	5.5	6.0	10.0	9.5	10.0
22	3.0	2.5	3.0	3.5	3.0	3.5	6.0	6.0	6.0	10.5	10.0	10.0
23	3.0	2.5	3.0	3.5	3.5	3.5	6.5	6.0	6.5	10.0	10.0	10.0
24	3.0	2.5	3.0	3.5	3.5	3.5	6.5	6.0	6.5	10.5	10.0	10.0
25	3.0	2.5	3.0	3.5	3.5	3.5	6.5	6.0	6.5	10.5	10.0	10.0
26	3.0	2.5	3.0	3.5	3.5	3.5	7.0	6.5	6.5	11.0	10.0	10.5
27	3.0	2.5	2.5	3.5	3.5	3.5	7.5	6.5	7.0	10.5	10.5	10.5
28	3.0	2.5	2.5	3.5	3.5	3.5	7.5	7.0	7.5	10.5	10.5	10.5
29	3.0	2.5	2.5	4.0	3.5	3.5	7.5	7.0	7.5	10.5	10.5	10.5
30	---	---	---	3.5	3.5	3.5	7.5	7.0	7.5	11.0	10.5	10.5
31	---	---	---	3.5	3.5	3.5	---	---	---	11.0	10.5	10.5
MONTH	3.0	2.5	2.5	4.0	2.5	3.0	7.5	3.5	5.5	11.0	7.5	9.0

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.0	10.5	10.5	12.0	11.5	11.5	16.0	16.0	16.0	17.0	16.0	16.5
2	11.0	10.5	11.0	12.0	11.5	11.5	17.0	16.0	16.5	16.5	16.0	16.0
3	11.0	10.5	10.5	12.0	11.5	12.0	17.0	16.5	16.5	16.5	16.0	16.0
4	11.0	10.5	10.5	12.0	11.5	12.0	17.0	16.5	17.0	16.5	16.0	16.5
5	11.0	10.5	11.0	12.0	12.0	12.0	17.5	17.0	17.0	16.0	15.5	15.5
6	11.0	10.5	11.0	12.0	12.0	12.0	17.0	16.5	17.0	16.0	15.5	15.5
7	11.0	10.5	11.0	12.5	12.0	12.0	17.0	16.5	17.0	16.0	15.5	16.0
8	11.5	10.5	11.0	12.5	12.0	12.0	17.0	16.5	16.5	16.5	16.0	16.0
9	12.0	10.5	11.5	12.5	12.0	12.0	17.0	16.5	17.0	16.5	16.0	16.5
10	12.0	11.0	11.5	12.5	12.0	12.5	17.0	16.5	17.0	16.0	15.0	15.5
11	11.5	11.0	11.0	14.0	12.0	12.5	17.5	16.5	17.0	15.5	15.0	15.0
12	11.5	10.5	11.0	14.0	12.5	12.5	17.0	17.0	17.0	15.5	15.0	15.0
13	11.0	10.5	11.0	14.0	13.0	13.5	17.0	16.0	16.5	15.5	15.0	15.0
14	11.0	10.5	11.0	14.0	13.5	13.5	16.0	16.0	16.0	15.5	15.0	15.0
15	11.5	11.0	11.0	15.0	14.0	14.5	17.0	16.0	16.5	15.5	15.0	15.0
16	11.5	11.0	11.0	15.5	14.5	15.0	17.0	16.5	17.0	15.5	15.0	15.0
17	11.5	11.0	11.0	15.5	14.5	15.5	17.0	16.5	17.0	15.0	15.0	15.0
18	12.0	11.5	11.5	15.0	14.5	15.0	17.5	17.0	17.0	15.5	15.0	15.0
19	12.5	11.0	12.0	16.5	15.0	16.0	17.0	16.5	17.0	15.5	15.0	15.0
20	11.5	11.0	11.0	16.5	15.5	16.0	17.0	16.5	17.0	15.5	15.0	15.0
21	12.5	11.5	12.0	16.0	15.0	15.5	17.0	16.5	16.5	15.5	15.0	15.0
22	12.5	11.0	12.0	15.0	15.0	15.0	17.0	16.5	16.5	15.5	15.0	15.5
23	11.5	11.0	11.5	15.5	13.5	14.5	17.0	16.0	16.5	15.5	15.0	15.5
24	12.0	11.0	11.5	14.0	13.5	14.0	16.5	16.0	16.0	15.5	15.0	15.5
25	11.5	11.0	11.0	14.0	13.5	14.0	16.5	16.0	16.0	15.5	15.5	15.5
26	11.5	11.0	11.5	16.0	14.0	15.0	16.5	16.0	16.5	16.0	15.5	15.5
27	12.5	11.5	12.0	15.5	14.5	15.0	17.0	16.5	16.5	15.5	15.5	15.5
28	13.0	11.5	12.0	16.5	15.5	16.0	17.0	16.5	16.5	15.5	15.5	15.5
29	12.0	11.5	12.0	16.5	15.5	16.0	16.5	16.5	16.5	15.5	15.5	15.5
30	12.0	11.5	11.5	16.5	15.5	16.0	17.0	16.5	16.5	15.5	15.5	15.5
31	---	---	---	16.0	16.0	16.0	16.5	16.0	16.5	---	---	---
MONTH	13.0	10.5	11.5	16.5	11.5	14.0	17.5	16.0	16.5	17.0	15.0	15.5
YEAR	18.0	2.5	10.0									

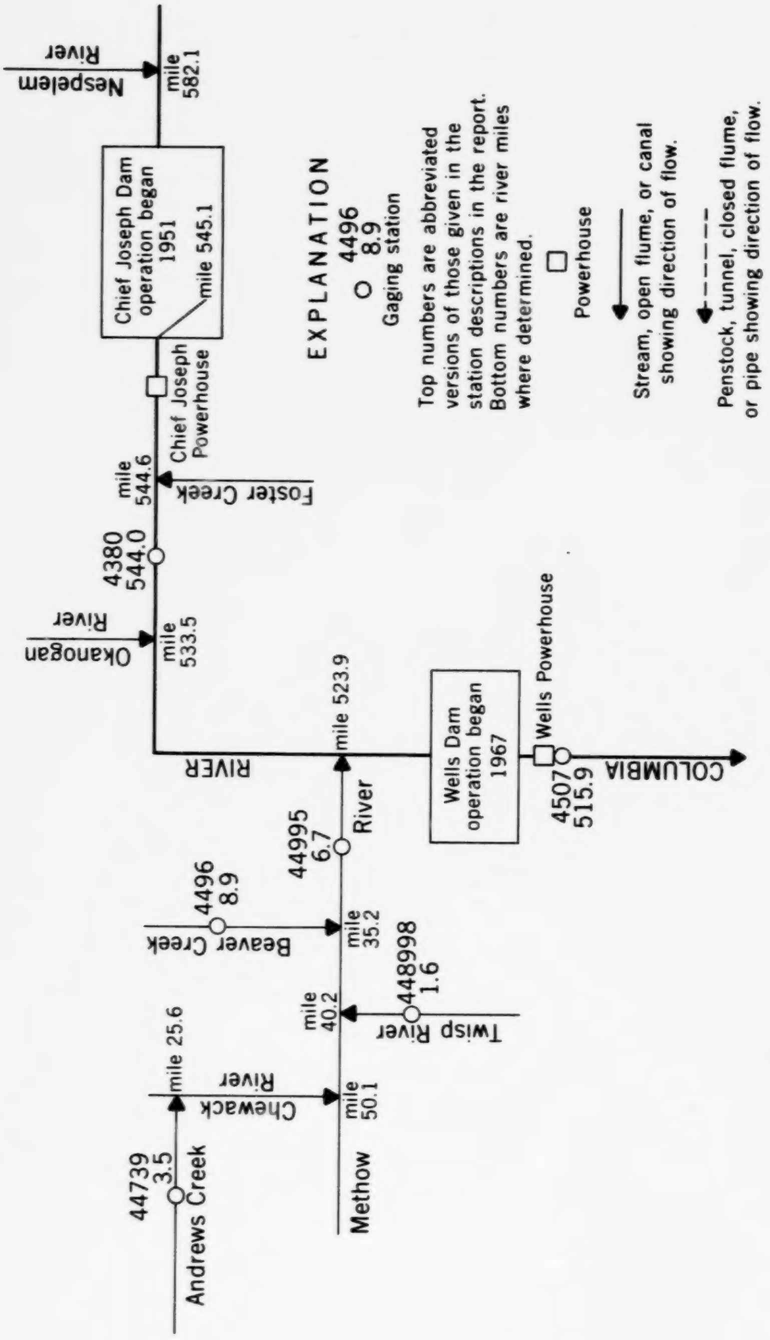
Nespelem River
mile 582.1
Chief Joseph Dam operation began 1951
mile 545.1
Chief Joseph Powerhouse
Foster Creek
mile 544.6
4380
544.0
Okanogan River
mile 533.5
RIVER
mile 523.9
Wells Dam operation began 1967
Wells Powerhouse
4507
515.9
COLUMBIA
44995
6.7
River
Beaver Creek
4496
8.9
mile 35.2
Twisp River
448998
1.6
mile 40.2
Chewack River
mile 25.6
mile 50.1
44739
3.5
Andrews Creek
Methow
EXPLANATION
4496
8.9
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.

Figure 9. Gaging stations in Columbia River basin from Chief Joseph to Wells Dam.

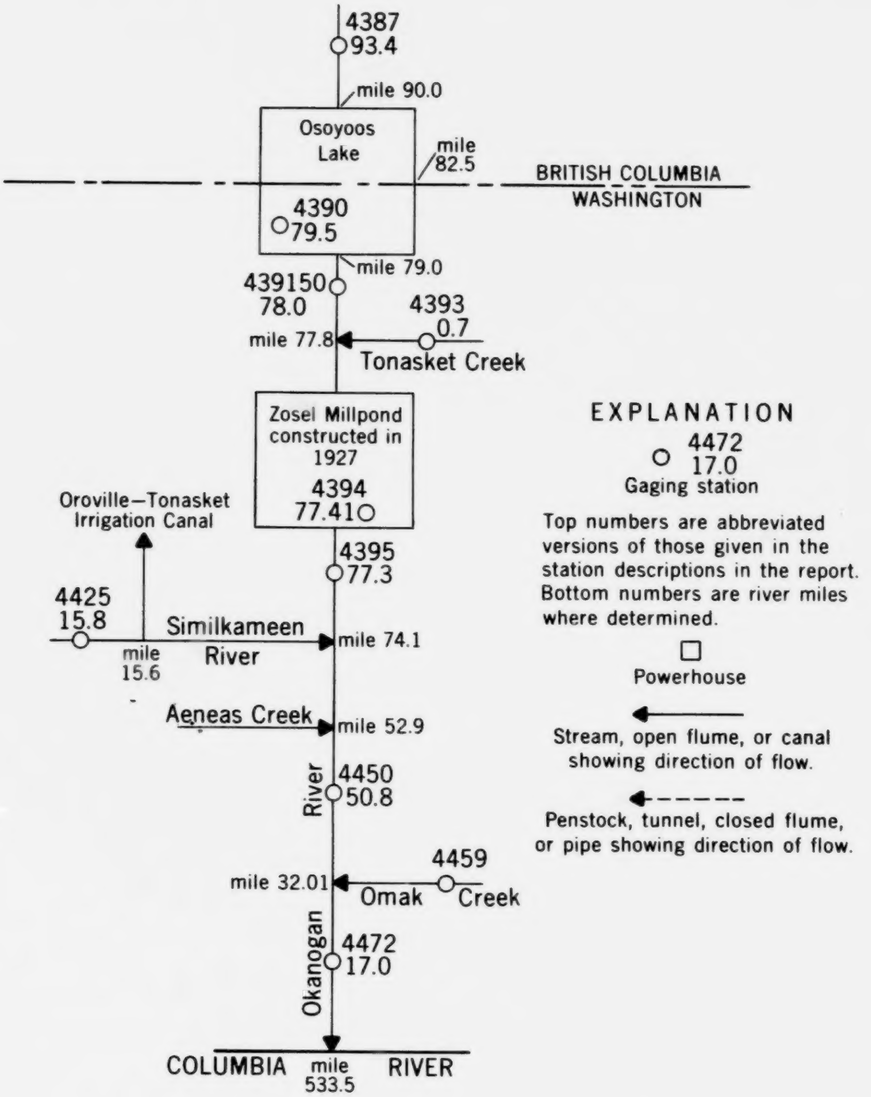
4387
93.4
mile 90.0
Osoyoos Lake
mile 82.5
BRITISH COLUMBIA
WASHINGTON
4390
79.5
mile 79.0
439150
78.0
4393
0.7
mile 77.8
Tonasket Creek
Zosel Millpond constructed in 1927
4394
77.41
Oroville—Tonasket Irrigation Canal
4395
77.3
4425
15.8
Similkameen River
mile 15.6
mile 74.1
Aeneas Creek
mile 52.9
4450
50.8
4459
mile 32.01
Omak Creek
Okanogan River
4472
17.0
COLUMBIA RIVER
mile 533.5
EXPLANATION
4472
17.0
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.

Figure 10. Gaging stations in Okanogan River basin.

12438000 COLUMBIA RIVER AT BRIDGEPORT, WA

LOCATION.--Lat 48°00'24", long 119°39'51", in SW¼SW¼ sec.14, T.29 N., R.25 E., Douglas County, Hydrologic Unit 17020005, on left bank at Bridgeport, 1.0 mi (1.6 km) downstream from Foster Creek, 1.1 mi (1.8 km) downstream from Chief Joseph Dam, and at mile 544.0 (875.3 km).

DRAINAGE AREA.--75,700 mi² (196,100 km²), approximately.

PERIOD OF RECORD.--April 1952 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Since May 26, 1967, auxiliary water-stage recorder 4,800 ft (1,460 m) upstream from base gage at same datum.

REMARKS.--Records good. Flow regulated by nine major reservoirs and numerous smaller reservoirs and powerplants. Diversion by Feeder Canal for Columbia Basin project (see sta 12435500) and for irrigation of about 380,000 acres (1,540 km²) in the United States and an additional 35,000 acres (142 km²) in Canada.

AVERAGE DISCHARGE.--24 years, 116,300 ft³/s (3,294 m³/s), 84,260,000 acre-ft/yr (104,000 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 495,800 ft³s (14,000 m³/s) June 11, 1961; maximum elevation, 792.20 ft (241.463 m) June 7, 1956; minimum observed discharge, 4,200 ft³/s (120 m³/s) Mar. 22, 1966, elevation, 746.91 ft (227.658 m); minimum daily discharge, 22,300 ft³/s (632 m³/s) Nov. 11, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 219,000 ft³/s (6,200 m³/s) Sept. 7; maximum elevation, 786.62 ft (239.762 m) Aug. 24; minimum daily discharge, 33,100 ft³/s (937 m³/s) Oct. 12; minimum elevation, 773.08 ft (235.635 m) Oct. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71900	82100	87900	109000	109000	148000	130000	114000	143000	172000	158000	128000
2	62000	64700	68900	105000	120000	162000	126000	132000	150000	162000	179000	133000
3	63900	80000	55900	88600	130000	165000	91700	129000	138000	173000	207000	140000
4	37200	67100	75000	114000	138000	153000	85000	110000	137000	175000	205000	139000
5	45600	81200	66500	120000	152000	163000	96300	129000	135000	172000	207000	128000
6	72100	92700	60900	107000	151000	163000	124000	133000	132000	171000	192000	133000
7	69000	88700	82000	108000	143000	142000	92600	145000	126000	171000	192000	219000
8	73300	85200	104000	106000	137000	141000	100000	164000	121000	161000	153000	190000
9	63000	63900	88900	107000	145000	141000	104000	175000	124000	127000	180000	179000
10	59900	90600	99800	111000	163000	137000	44100	184000	132000	127000	181000	150000
11	50800	80600	109000	104000	163000	130000	76700	153000	123000	126000	193000	129000
12	33100	83500	113000	117000	163000	124000	130000	146000	114000	128000	172000	122000
13	69200	89600	80600	107000	136000	121000	145000	147000	115000	148000	164000	128000
14	83700	71800	77000	112000	119000	122000	149000	144000	115000	162000	130000	115000
15	79500	88800	104000	107000	92000	121000	156000	146000	121000	170000	135000	114000
16	72500	85800	110000	125000	133000	124000	163000	148000	120000	183000	155000	105000
17	64400	105000	126000	93800	139000	127000	162000	153000	120000	196000	156000	106000
18	53000	107000	114000	95000	161000	128000	148000	157000	121000	208000	210000	87500
19	55200	116000	103000	106000	152000	128000	139000	149000	120000	210000	200000	57100
20	93200	111000	105000	103000	142000	127000	134000	144000	125000	200000	178000	86600
21	93600	112000	103000	123000	123000	124000	130000	149000	142000	190000	164000	94400
22	103000	102000	110000	121000	134000	123000	129000	157000	150000	176000	137000	96500
23	91100	77100	116000	126000	156000	123000	122000	155000	149000	158000	218000	96300
24	88600	113000	81300	108000	162000	123000	125000	155000	166000	117000	137000	97900
25	82400	97600	63700	116000	140000	121000	131000	150000	167000	113000	126000	60400
26	65500	109000	93300	117000	142000	119000	134000	157000	160000	140000	162000	60400
27	99800	76400	80100	117000	141000	109000	125000	152000	170000	179000	204000	96100
28	83900	98300	73800	118000	142000	110000	128000	156000	176000	188000	197000	96100
29	86000	101000	115000	119000	143000	122000	131000	157000	179000	190000	154000	91700
30	92400	95600	110000	120000	---	135000	113000	153000	178000	165000	176000	91100
31	97500	---	104000	120000	---	120000	---	153000	---	148000	136000	---
TOTAL	2246300	2717300	2881600	3450400	4071000	4096000	3664400	4596000	4169000	5106000	5358000	3470100
MEAN	72460	90580	92950	111300	140400	132100	122100	148300	139000	164700	172800	115700
MAX	103000	116000	126000	126000	163000	165000	163000	184000	179000	210000	218000	219000
MIN	33100	63900	55900	88600	92000	109000	44100	110000	114000	113000	126000	57100
AC-FT	4456000	5390000	5716000	6844000	8075000	8124000	7268000	9116000	8269000	10130000	10630000	6883000

CAL YR 1975 TOTAL 37957400 MEAN 104000 MAX 192000 MIN 33100 AC-FT 75290000
WTR YR 1976 TOTAL 45826100 MEAN 125200 MAX 219000 MIN 33100 AC-FT 90900000

12438700 OKANAGAN RIVER NEAR OLIVER, BRITISH COLUMBIA
(International gaging station)

LOCATION.--Lat 49°06'53", long 119°33'50", approximately 75 ft (23 m) upstream from drop structure No. 3, 0.8 mi (1.3 km) downstream from Testalinden Creek, 4.2 mi (6.8 km) south of Oliver, and at mile 93.4 (150.3 km).

DRAINAGE AREA.--2,930 mi^2 (7,590 km^2).

PERIOD OF RECORD.--October 1961 to current year in reports of Geological Survey. March 1944 to December 1948 and April 1952 to September 1961 in reports of Department of Northern Affairs and National Resources, Canada.

GAGE.--Water-stage recorder.

REMARKS.--Records good. Regulation by control dams at outlets of Okanagan and Skaha Lakes. Diversion for irrigation.

COOPERATION.--This station is maintained by Canada under agreement with the United States subsequent to Feb. 14, 1965.

AVERAGE DISCHARGE.--26 years (water years 1945-47, 1953-56, 1958-76), 618 ft^3/s (17.50 m^3/s), 447,700 acre-ft/yr (552 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,130 ft^3/s (88.6 m^3/s) May 27, 1974, gage height, 7.07 ft (2.155 m); minimum, 55.9 ft^3/s (1.58 m^3/s) Jan. 30, 1963, gage height, 0.63 ft (0.192 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,660 ft^3/s (47.0 m^3/s) June 29, gage height, 5.12 ft (1.561 m); minimum daily, 175 ft^3/s (4.96 m^3/s) Nov. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	793	301	389	353	1100	831	783	365	689	1500	912	1110
2	792	219	393	353	1100	795	601	391	581	1550	961	1060
3	792	219	411	352	1070	796	584	413	552	1600	1030	1050
4	796	219	435	356	1040	801	572	519	530	1620	1110	1050
5	796	219	473	358	1040	802	534	858	505	1610	1120	1040
6	794	219	523	358	1030	802	689	861	476	1590	1140	1060
7	792	215	510	360	1010	802	749	848	450	1570	1180	1050
8	791	213	452	360	1020	782	677	938	393	1550	1180	1040
9	624	212	295	355	1020	817	616	1120	407	1540	1170	1020
10	511	208	258	351	1020	987	643	1270	415	1570	1140	990
11	487	175	232	348	733	997	641	1350	392	1580	1020	977
12	465	178	208	339	351	959	629	1270	371	1540	1000	986
13	431	208	208	335	313	857	586	1270	463	1480	980	943
14	408	299	206	346	293	855	569	1320	441	1470	1010	868
15	396	341	205	440	281	905	550	1250	457	1440	1050	868
16	510	346	205	734	273	939	547	1250	611	1420	1040	890
17	686	347	213	757	558	873	543	1220	736	1410	1080	944
18	713	419	230	771	1390	759	529	1230	836	1400	1070	935
19	725	580	252	784	1470	643	507	1060	846	1390	1080	940
20	762	540	281	690	1520	630	571	755	902	1370	1090	949
21	782	446	278	410	1540	617	840	723	1030	1380	1120	1000
22	787	312	279	383	1540	688	741	664	1330	1360	1110	969
23	786	325	281	349	1550	966	297	687	1240	1290	1080	716
24	785	300	281	301	1550	1030	252	750	1130	1270	1050	690
25	785	358	279	297	1550	1090	295	824	1190	1270	1060	672
26	784	371	274	445	1370	798	360	893	1470	1160	1160	660
27	785	385	268	976	946	578	365	889	1580	881	1160	646
28	783	382	269	1050	917	573	358	937	1620	847	1150	605
29	781	378	274	1130	879	658	347	807	1580	827	1110	598
30	692	384	286	1140	---	910	352	775	1440	849	1090	600
31	330	---	310	1120	---	913	---	772	---	915	1110	---
TOTAL	21144	9318	9458	16701	29474	25453	16327	28279	24663	42249	33563	26926
MEAN	682	311	305	539	1016	821	544	912	822	1363	1083	898
MAX	796	580	523	1140	1550	1090	840	1350	1620	1620	1180	1110
MIN	330	175	205	297	273	573	252	365	371	827	912	598
AC-FT	41940	18480	18760	33130	58460	50490	32380	56090	48920	83800	66570	53410

CAL YR 1975 TOTAL 236073 MEAN 647 MAX 2250 MIN 175 AC-FT 468300
WTR YR 1976 TOTAL 283555 MEAN 775 MAX 1620 MIN 175 AC-FT 562400

12439000 OSOYOOS LAKE NEAR OROVILLE, WA
(International gaging station)

LOCATION.--Lat 48°57'24", long 119°26'18", in NW¼NE¼ sec.21, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on west shore 1 mi (1.6 km) north of Oroville, 3 mi (4.8 km) south of international boundary, and at mile 79.5 (127.9 km).

DRAINAGE AREA.--3,132 mi² (8,112 km²).

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 1346: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Sept. 2, 1928, nonrecording gage and Sept. 2, 1928, to Nov. 9, 1929, water-stage recorder, 100 ft (30 m) south of international boundary, Nov. 10, 1929, to Sept. 7, 1930, Mar. 22, 1952, to Sept. 23, 1953, June 25, 1955, to Apr. 11, 1956, nonrecording gage and Sept. 8, 1930, to Mar. 21, 1952, Sept. 24, 1953, to June 24, 1955, Apr. 12, 1956, to Feb. 7, 1969, water-stage recorder at site 1 mi (1.6 km) south of international boundary. All elevations prior to Oct. 1, 1944, at datum 2.39 ft (0.728 m) lower. To convert from present datum to Geodetic Survey of Canada 1934 datum, subtract 1.63 ft (0.497 m); to convert from present datum to 1947 joint adjustment of U.S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft (0.079 m).

REMARKS.--Approximately 44,000 acres (1,780 hm²) are irrigated above station in Canada. Elevation may occasionally be affected by dam at Zosel's mill in Oroville.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 917.11 ft (279.535 m) June 2, 3, 1972; minimum 908.82 ft (277.008 m), present datum, Oct. 14, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 29, 1894, reached an elevation of 918.8 ft ±0.5 ft (280.05 m ±0.15 m), present datum, 1 mi (1.6 km) below present lake outlet, from floodmark on old Okanogan Hotel Building, pointed out in 1930 by Mr. and Mrs. Stansbury, who kept a diary and operated the hotel in 1894.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 911.91 ft (277.950 m) July 7, 9; minimum, 909.28 ft (277.149 m) Dec. 20.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	911.39	910.28	909.58	909.70	911.00	911.30	910.92	910.27	910.73	911.65	911.05	911.61
2	911.40	910.17	909.59	909.77	911.08	911.18	910.97	910.23	910.65	911.71	911.13	911.59
3	911.33	910.05	909.60	909.85	911.16	911.09	910.99	910.21	910.57	911.76	911.27	911.56
4	911.29	909.97	909.62	909.92	911.20	910.98	910.99	910.22	910.47	911.81	911.41	911.55
5	911.24	909.90	909.64	910.01	911.21	910.92	911.01	910.32	910.39	911.86	911.50	911.54
6	911.20	909.82	909.66	910.08	911.19	910.86	911.05	910.46	910.32	911.87	911.59	911.53
7	911.16	909.75	909.71	910.18	911.16	910.82	911.13	910.59	910.23	911.88	911.66	911.51
8	911.11	909.67	909.74	910.24	911.14	910.77	911.19	910.72	910.15	911.87	911.70	911.49
9	911.03	909.62	909.74	910.31	911.12	910.74	911.19	910.89	910.07	911.89	911.74	911.48
10	910.91	909.56	909.71	910.37	911.10	910.73	911.18	911.08	910.02	911.87	911.74	911.46
11	910.78	909.49	909.65	910.44	911.07	910.77	911.16	911.26	909.96	911.86	911.70	911.44
12	910.64	909.42	909.59	910.50	910.92	910.76	911.14	911.38	909.89	911.88	911.65	911.41
13	910.53	909.37	909.52	910.54	910.73	910.77	911.12	911.41	909.86	911.85	911.58	911.39
14	910.39	909.35	909.46	910.59	910.54	910.75	911.07	911.41	909.85	911.81	911.55	911.35
15	910.27	909.35	909.42	910.65	910.38	910.74	911.05	911.40	909.96	911.76	911.53	911.31
16	910.17	909.39	909.38	910.78	910.24	910.74	911.00	911.38	910.10	911.73	911.52	911.27
17	910.17	909.41	909.35	910.93	910.12	910.75	910.95	911.41	910.29	911.72	911.53	911.33
18	910.18	909.44	909.32	911.08	910.18	910.77	910.92	911.42	910.48	911.68	911.53	911.41
19	910.19	909.48	909.31	911.23	910.44	910.76	910.86	911.43	910.71	911.64	911.51	911.47
20	910.22	909.56	909.30	911.34	910.68	910.70	910.83	911.31	910.93	911.61	911.51	911.52
21	910.27	909.62	909.30	911.24	910.89	910.64	910.86	911.17	911.11	911.60	911.51	911.53
22	910.30	909.63	909.31	911.06	911.08	910.59	910.95	911.02	911.23	911.56	911.52	911.54
23	910.34	909.63	909.32	910.90	911.24	910.59	910.92	910.92	911.32	911.53	911.51	911.51
24	910.35	909.63	909.35	910.73	911.38	910.69	910.83	910.85	911.31	911.53	911.49	911.44
25	910.36	909.61	909.35	910.57	911.49	910.79	910.74	910.83	911.26	911.51	911.52	911.37
26	910.39	909.61	909.36	910.43	911.60	910.83	910.67	910.80	911.27	911.51	911.53	911.30
27	910.39	909.62	909.37	910.42	911.58	910.79	910.56	910.81	911.36	911.40	911.57	911.23
28	910.40	909.59	909.38	910.52	911.50	910.72	910.48	910.84	911.47	911.27	911.60	911.16
29	910.44	909.56	909.38	910.66	911.39	910.64	910.40	910.83	911.57	911.16	911.62	911.09
30	910.45	909.56	909.49	910.79	---	910.63	910.33	910.81	911.60	911.06	911.62	911.03
31	910.39	---	909.64	910.90	---	910.78	---	910.76	---	911.01	911.61	---
MEAN	910.63	909.64	909.49	910.54	910.99	910.79	910.92	910.92	910.64	911.64	911.53	911.41
MAX	911.40	910.28	909.74	911.34	911.60	911.30	911.19	911.43	911.60	911.89	911.74	911.61
MIN	910.17	909.35	909.30	909.70	910.12	910.59	910.33	910.21	909.85	911.01	911.05	911.03

CAL YR 1975 MEAN 910.61 MAX 912.30 MIN 909.30
WTR YR 1976 MEAN 910.76 MAX 911.89 MIN 909.30

12439150 OKANOGAN RIVER AT BRIDGE STREET, AT OROVILLE, WA
(International gaging station)

LOCATION.--Lat 48°56'20", long 119°25'36", in SW¼NW¼ sec.27, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on right bank 15 ft (5 m) upstream from Cherry Street bridge in Oroville, 700 ft (213 m) upstream from Tonasket Creek, 1.0 mi (1.6 km) downstream from Osoyoos Lake, and at mile 78.0 (125.5 km).

DRAINAGE AREA.--3,133 m^2 (8,114 km^2).

WATER-ELEVATION RECORDS

PERIOD OF RECORD.-- October 1942 to September 1964 (annual maximum and minimum gage heights only published in WSP 1933), October 1964 to current year (gage heights only). April 1939 to November 1944 (fragmentary) and December 1944 to September 1964 gage heights available in file of district office.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Nov. 14, 1944, nonrecording gage and Nov. 15, 1944 to Sept. 30, 1945, water-stage recorder at present site at datum 897.61 ft (273.592 m) higher and Oct. 1, 1945 to Sept. 30, 1975, at datum 900.00 ft (274.320 m) higher. To convert to Geodetic Survey of Canada 1934 datum, subtract 1.63 ft (0.497 m); to convert to 1947 joint adjustment of U.S. Coast and Geodetic Survey of Canada, subtract 0.26 ft (0.079 m).

COOPERATION.--This station is maintained by the United States under agreement with Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 916.99 ft (279.499 m) June 2, 1972; minimum recorded, 907.30 ft (276.545 m) Mar. 3, 4, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 911.44 ft (277.807 m) July 9, Aug. 9, 10; minimum, 908.86 ft (277.021 m), Dec. 31.

ELEVATION. IN FEET ABOVE MEAN SEA LEVEL. WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	911.25	909.77	909.21	909.59	910.72	910.92	910.82	910.07	910.32	911.21	910.82	911.31
2	911.18	909.67	909.22	909.71	910.80	910.86	910.84	910.03	910.24	911.24	910.96	911.29
3	911.02	909.56	909.23	909.81	910.93	910.74	910.85	910.05	910.16	911.29	911.15	911.26
4	911.00	909.51	909.24	909.90	910.97	910.61	910.87	910.09	910.07	911.33	911.21	911.25
5	910.95	909.44	909.27	909.98	910.88	910.52	910.89	910.21	909.99	911.37	911.26	911.25
6	910.91	909.38	909.28	910.06	910.81	910.47	910.95	910.34	909.92	911.39	911.31	911.23
7	910.86	909.31	909.32	910.14	910.78	910.43	911.01	910.48	909.85	911.39	911.36	911.21
8	910.78	909.24	909.35	910.21	910.74	910.38	911.05	910.62	909.77	911.38	911.40	911.20
9	910.62	909.20	909.35	910.28	910.73	910.33	911.02	910.80	909.69	911.41	911.43	911.18
10	910.51	909.17	909.33	910.33	910.71	910.35	911.01	910.91	909.69	911.38	911.41	911.16
11	910.39	909.10	909.28	910.41	910.68	910.40	910.98	911.07	909.64	911.36	911.37	911.15
12	910.23	909.04	909.22	910.46	910.53	910.36	910.97	911.09	909.56	911.38	911.32	911.12
13	910.10	909.00	909.17	910.50	910.32	910.38	910.94	911.05	909.52	911.35	911.23	911.08
14	909.97	908.98	909.11	910.54	910.13	910.36	910.87	911.04	909.62	911.32	911.21	911.05
15	909.86	908.98	909.08	910.62	909.96	910.34	910.88	911.02	909.91	911.27	911.20	911.02
16	909.75	909.01	909.04	910.74	909.82	910.35	910.83	910.99	910.06	911.24	911.17	911.06
17	909.70	909.04	909.01	910.89	909.70	910.38	910.77	911.06	910.25	911.23	911.20	911.18
18	909.72	909.07	908.99	911.04	909.75	910.46	910.76	911.11	910.43	911.20	911.20	911.27
19	909.74	909.12	908.97	911.17	910.01	910.45	910.69	911.05	910.68	911.15	911.18	911.33
20	909.77	909.19	908.96	911.20	910.27	910.38	910.66	910.90	910.90	911.12	911.18	911.33
21	909.82	909.24	908.97	910.96	910.49	910.32	910.69	910.75	911.00	911.11	911.18	911.30
22	909.86	909.25	908.98	910.77	910.68	910.27	910.78	910.61	910.95	911.07	911.19	911.32
23	909.88	909.25	908.98	910.60	910.84	910.27	910.75	910.52	910.97	911.05	911.19	911.29
24	909.87	909.26	909.00	910.42	910.98	910.37	910.65	910.47	910.91	911.14	911.18	911.23
25	909.88	909.24	909.01	910.25	911.12	910.48	910.58	910.44	910.83	911.09	911.19	911.16
26	909.90	909.24	909.02	910.10	911.22	910.51	910.54	910.40	910.82	911.08	911.21	911.08
27	909.91	909.31	909.03	910.09	911.21	910.47	910.38	910.41	910.90	910.96	911.25	911.02
28	909.92	909.26	909.03	910.21	911.12	910.39	910.29	910.50	911.01	910.83	911.28	910.95
29	909.95	909.20	909.16	910.35	911.02	910.31	910.22	910.46	911.09	910.73	911.31	910.88
30	909.96	909.20	909.42	910.50	---	910.41	910.14	910.41	911.15	910.63	911.31	910.81
31	909.87	---	908.97	910.61	---	910.69	---	910.36	---	910.69	911.30	---
MEAN	910.23	909.24	909.14	910.40	910.62	910.45	910.76	910.62	910.33	911.17	911.23	911.17
MAX	911.25	909.77	909.42	911.20	911.22	910.92	911.05	911.11	911.15	911.41	911.43	911.33
MIN	909.70	908.98	908.96	909.59	909.70	910.27	910.14	910.03	909.52	910.63	910.82	910.81

WTR YR 1976 MEAN 910.45 MAX 911.43 MIN 908.96

12439150 OKANOGAN RIVER AT BRIDGE STREET AT OROVILLE, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-1970, 1975 to September 1976 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1959 to September 1960.
pH: July 1959 to September 1960.
WATER TEMPERATURE: July 1959 to September 1960.

REMARKS.--Records collected at same site prior to October 1970 was published as 12439500 "Okanogan River at Oroville."

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
22...	1340	718	270	7.1	12.3	13	5	10.0	<50	B4
29...	1345	792	280	8.2	11.0	21	2	10.1	B200	<2
NOV										
12...	1315	320	290	8.3	7.9	13	2	12.2	--	<2
19...	1335	338	280	8.5	5.8	13	3	12.9	B15	<2
DEC										
10...	1305	429	260	8.1	3.7	13	4	12.2	B24	<2
17...	1800	289	290	8.0	1.8	21	2	13.8	B20	<2
JAN										
07...	1330	177	310	7.1	.6	25	1	13.9	<2	<2
21...	1220	992	290	8.3	1.3	17	2	14.5	<2	<2
FEB										
04...	1140	964	290	7.1	1.4	13	2	14.7	<2	<2
25...	1245	1250	290	8.6	3.5	9	2	17.2	B2	B2
MAR										
10...	1340	923	290	8.2	4.0	8	2	16.2	<2	<2
24...	1410	800	290	8.6	5.2	13	3	15.5	B2	<2
APR										
14...	1325	683	295	8.5	8.9	8	3	12.6	2	<2
28...	1325	550	295	8.5	11.3	21	3	11.2	2	<2
MAY										
12...	1305	1040	288	8.2	15.1	17	5	11.0	B20	2
26...	1330	962	285	8.2	16.4	8	30	10.1	B12	<2
JUN										
09...	1320	518	285	8.1	18.1	8	2	11.0	2	2
23...	1245	1010	260	8.2	18.9	4	2	10.6	--	B2
JUL										
14...	1310	1600	264	8.5	21.0	17	2	10.0	<50	B4
28...	1300	1140	260	8.5	22.7	13	2	9.3	B16	<2
AUG										
11...	1250	1150	260	8.6	23.2	17	3	10.7	B12	<2
25...	1320	1060	260	8.6	20.4	21	3	9.4	--	B6
SEP										
15...	1315	956	260	8.1	19.2	29	5	10.6	<5	<2
22...	1320	916	260	9.1	19.9	21	4	12.1	<2	<2

B Results based upon colony counts outside the ideal range.

12439150 OKANOGAN RIVER AT BRIDGE STREET AT OROVILLE, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT									
22...	.03	.07	.02	.00	0	1	3	.0	0
29...	.06	.06	.02	.01	4	2	3	.0	6
NOV									
12...	.08	.04	.02	.00	0	2	4	.0	10
19...	.03	.04	.02	.00	0	1	4	.0	0
DEC									
10...	.06	.06	.03	.00	--	--	--	.0	0
17...	--	--	--	.00	0	1	5	.1	0
JAN									
07...	.08	.06	.02	.00	0	0	6	.0	0
21...	.08	.03	.02	.00	0	3	3	.0	0
FEB									
04...	.07	.02	.01	.00	0	0	1	.0	0
25...	.01	.06	.01	.00	0	2	7	.0	0
MAR									
10...	.02	.03	.01	.00	0	2	4	.0	0
24...	.01	.02	.02	.00	0	0	2	.3	0
APR									
14...	.00	.04	.03	.00	0	0	0	.0	0
28...	.01	.04	.02	.00	0	1	1	.0	0
MAY									
12...	.01	.04	.03	.00	0	0	4	.0	0
26...	.01	.04	.06	.00	0	0	6	.0	0
JUN									
09...	.01	.02	.01	.00	0	0	3	.0	0
23...	.01	.04	.02	.00	0	1	3	.0	0
JUL									
14...	.00	.05	.02	.00	0	1	4	.0	0
28...	.01	.04	.02	.00	0	2	8	.0	0
AUG									
11...	.00	.06	.02	.00	0	1	6	.0	0
25...	.01	.02	.02	.00	0	2	11	.0	0
SEP									
15...	.01	.07	.04	.00	0	2	5	.0	0
22...	.01	.06	.04	.00	10	2	9	.0	10

12439300 TONASKET CREEK AT OROVILLE, WA

LOCATION.--Lat 48°56'35", long 119°24'45", in NW¼NE¼ sec.27, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on left bank 7 ft (2.1 m) downstream from road bridge, 1.0 mi (1.6 km) northeast of Oroville, and 0.7 mi (1.1 km) above mouth.

DRAINAGE AREA.--60.1 mi² (155.7 km²).

PERIOD OF RECORD.--March 1967 to current year.

REVISED RECORDS.--WRD Wash. 1973: 1972(M).

GAGE.--Water-stage recorder. Altitude of gage is 960 ft (293 m), from topographic map.

REMARKS.--Records fair except those for periods of no gage-height record, which are poor. Two small diversions for irrigation of 45 acres (182,000 m²) above station.

AVERAGE DISCHARGE.--9 years, 2.93 ft³/s (0.0830 m³/s) 0.66 in/yr (17 mm/yr), 2,120 acre-ft/yr (2.61 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 455 ft³/s (12.9 m³/s) Feb. 27, 1973, gage height, 5.47 ft (1.667 m), from rating curve extended above 50 ft³/s (1.42 m³/s) on basis of slope-area measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 30 ft³/s (0.850 m³/s) and maximum discharge, 91 ft³/s (2.58 m³/s) Mar. 17, 3.62 ft (1.103 m); minimum discharge, no flow Nov. 15-20, 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	3.0	.08	.07	1.7	.60	5.9	5.9	12	6.4	.50	1.7
2	.62	2.0	.33	.07	1.7	.70	3.1	7.0	9.5	9.8	.50	1.5
3	1.5	1.4	1.4	.07	1.0	.40	2.9	9.1	9.1	21	.80	1.8
4	2.5	.94	5.0	.07	.50	.10	6.6	9.1	8.4	14	4.0	1.4
5	3.5	.60	10	.07	.40	.09	12	7.4	8.0	11	3.5	.57
6	4.0	.42	6.6	.07	.20	.08	12	6.8	6.6	7.4	3.0	.79
7	4.0	.29	4.5	.07	.10	.09	5.6	5.6	5.9	5.9	2.4	1.5
8	4.5	.18	2.9	.09	.05	.10	6.2	4.0	5.4	5.6	2.7	2.3
9	4.6	.12	4.0	.07	.07	.15	6.8	3.1	5.3	5.1	2.3	2.0
10	4.6	.08	.90	.05	.10	.40	5.9	2.9	4.3	4.5	2.2	1.4
11	4.4	.05	.13	.03	.30	1.2	4.8	5.1	3.5	4.0	2.0	2.0
12	4.1	.03	.07	.01	.70	1.7	4.3	3.8	3.0	3.8	1.8	2.2
13	3.7	.02	.07	.01	.70	2.2	5.1	3.1	2.5	3.3	1.7	2.5
14	3.3	.01	.07	.10	.60	2.3	5.1	2.5	1.7	3.1	1.6	2.3
15	2.9	0	.07	.17	.60	2.6	5.1	1.4	2.9	3.1	1.5	2.0
16	2.6	0	.07	.57	1.0	4.8	4.5	1.2	3.3	2.9	1.4	2.0
17	2.5	0	.07	9.9	1.1	29	4.0	1.4	2.5	2.7	1.4	1.8
18	2.5	0	.07	6.2	.70	37	3.5	1.5	2.0	2.3	1.4	.44
19	2.5	0	.07	4.8	.60	6.4	3.3	1.5	3.5	2.0	1.3	.17
20	2.6	0	.07	1.3	.60	5.1	2.7	3.5	7.0	1.7	.95	.11
21	6.2	.01	.07	.90	.57	3.5	2.7	2.5	8.8	1.5	1.0	.21
22	5.0	.01	.10	.80	.57	3.6	2.7	1.7	11	1.3	.27	.27
23	3.8	.01	.10	.70	.74	2.4	2.7	2.5	7.4	1.2	.73	.13
24	2.8	.01	.10	.60	1.2	3.8	2.5	2.5	7.4	1.0	1.7	.27
25	5.3	.01	.10	.40	.86	3.5	2.5	3.5	6.2	.90	2.2	.52
26	4.5	0	.10	2.0	.67	2.4	2.9	1.8	5.9	.90	1.7	.30
27	4.2	0	.10	1.5	.70	2.7	5.5	3.1	5.9	.80	1.0	.95
28	4.2	0	.10	1.8	.50	2.5	5.9	7.4	6.2	.70	1.0	1.8
29	4.7	.01	.10	2.0	.60	2.5	5.9	5.1	6.8	.70	.95	2.0
30	5.8	.02	.10	2.2	---	2.7	5.6	6.7	5.9	.60	1.0	2.0
31	4.3	---	.10	2.0	---	8.4	---	12	---	.60	1.5	---
TOTAL	112.26	9.21	37.54	38.69	19.28	133.81	148.1	134.2	178.6	129.80	50.50	38.93
MEAN	3.62	.31	1.21	1.25	.66	4.32	4.94	4.33	5.95	4.19	1.63	1.30
MAX	6.2	3.0	10	9.9	1.7	37	12	12	12	21	4.0	2.5
MIN	.44	0	.07	.01	.05	.08	2.5	1.2	1.7	.60	.27	.11
CFSM	.06	.005	.02	.02	.01	.07	.08	.07	.10	.07	.03	.02
IN.	.07	.006	.02	.02	.01	.08	.09	.08	.11	.08	.03	.02
AC-FT	223	18	74	77	38	265	294	266	354	257	100	77

CAL YR 1975 TOTAL 937.50 MEAN 2.57 MAX 20 MIN 0 CFSM .04 IN .58 AC-FT 1860
WTR YR 1976 TOTAL 1030.92 MEAN 2.82 MAX 37 MIN 0 CFSM .05 IN .64 AC-FT 2040

NOTE.--No gage-height record Oct. 7 to Jan. 6 and July 6 to Aug. 17.

12439400 OKANOGAN RIVER AT ZOSEL MILLPOND, AT OROVILLE, WA
(International gaging station)

LOCATION.--Lat 48°55'55", long 119°25'05", in SE¼SW¼ sec.27, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on left bank in Oroville, 0.4 mi (0.6 km) downstream from Tonasket Creek, 1.6 mi (2.6 km) downstream from Osoyoos Lake and at mile 77.41 (124.55 km).

DRAINAGE AREA.--3,195 mi² (8,275 km²).

PERIOD OF RECORD.--October 1942 to September 1964 (annual maximum and minimum gage heights only, published in WSP 1933), October 1964 to current year (gage heights only). April 1939 to March 1944 (fragmentary) and April 1944 to September 1964 gage heights available in file of district office.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Mar. 27, 1944, nonrecording gage and Mar. 28, 1944 to Sept. 30, 1945 water-stage recorder at present site at datum 897.61 ft (273.592 m) higher and Oct. 1, 1945 to Sept. 30, 1975, at datum 900.00 ft (274.320 m) higher. To convert to Geodetic Survey of Canada 1934 datum, subtract 1.63 ft (0.497 m); to convert to 1947 joint adjustment of U.S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft (0.079 m).

COOPERATION.--This station is maintained by the United States under agreement with Canada.

EXTREMES FOR PERIOD.--Maximum elevation recorded, 916.91 ft (279.474 m) June 2, 1972; minimum recorded,905.90 ft (276.118 m) Jan. 3, 1959, but may have been lower during period of no gage-height record Mar. 3 or 4, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 911.26 ft (277.752 m) Jan. 20; minimum, 907.43 ft (276.585 m) about Dec. 20, from recorded range in stage.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	911.11	908.81	907.92	---	910.42	910.47	910.66	909.71	909.32	910.28	910.52	910.94
2	910.97	908.68	907.94	---	910.51	910.40	910.69	909.66	909.23	910.26	910.76	910.93
3	910.73	908.50	907.93	---	910.67	910.27	910.70	909.76	909.14	910.27	911.01	910.90
4	910.71	908.43	907.99	---	910.71	910.10	910.71	909.90	909.04	910.31	910.98	910.88
5	910.66	908.34	908.03	---	910.49	909.99	910.72	910.03	908.95	910.35	910.97	910.89
6	910.62	908.24	908.06	---	910.36	909.92	910.76	910.16	908.88	910.37	910.97	910.87
7	910.57	908.12	908.10	910.11	910.32	909.87	910.82	910.31	908.80	910.40	910.98	910.85
8	910.40	908.00	908.15	910.18	910.27	909.80	910.81	910.46	908.70	910.40	911.03	910.83
9	910.11	907.93	908.17	---	910.26	909.75	910.73	910.67	908.69	910.43	911.05	910.81
10	909.98	907.87	908.13	---	910.22	909.77	910.72	910.61	908.90	910.37	911.00	910.79
11	909.82	907.74	---	---	910.18	909.84	910.69	910.74	908.99	910.33	910.94	910.78
12	909.61	907.63	---	---	910.01	909.77	910.68	910.53	908.77	910.34	910.88	910.75
13	909.45	907.56	---	910.48	909.74	909.81	910.64	910.26	908.51	910.31	910.80	910.72
14	909.25	907.54	---	910.52	909.49	909.79	910.57	910.26	908.90	910.28	910.77	910.68
15	909.10	907.53	---	910.59	909.25	909.76	910.58	910.27	909.86	910.23	910.76	910.65
16	908.91	907.55	---	910.70	909.04	909.77	910.54	910.20	910.02	910.19	910.73	910.79
17	908.83	907.59	---	910.85	908.84	909.79	910.47	910.41	910.22	910.17	910.78	911.03
18	908.86	907.65	---	911.00	908.94	909.83	910.47	910.60	910.38	910.15	910.79	911.11
19	908.89	907.71	---	911.13	909.34	909.66	910.38	910.29	910.64	910.10	910.77	911.17
20	908.95	907.85	---	911.06	909.68	909.55	910.35	910.03	910.86	910.07	910.77	911.13
21	909.02	907.95	---	910.67	909.96	909.49	910.38	909.80	910.85	910.08	910.78	911.05
22	909.09	907.98	---	910.46	910.16	909.42	910.48	909.64	910.48	910.04	910.79	911.06
23	909.14	907.98	---	910.27	910.35	909.41	910.44	909.62	910.35	910.06	910.78	911.03
24	909.04	907.99	---	910.07	910.50	909.56	910.34	909.68	910.09	910.47	910.77	910.97
25	908.90	907.97	---	909.87	910.67	909.72	910.26	909.59	909.88	910.36	910.79	910.90
26	908.93	907.97	---	909.69	910.79	909.76	910.22	909.48	909.78	910.27	910.81	910.83
27	908.93	908.07	---	909.68	910.78	910.04	909.98	909.46	909.83	910.16	910.85	910.75
28	908.95	908.00	---	909.83	910.69	909.62	909.95	909.85	909.94	910.00	910.90	910.68
29	908.98	907.92	---	910.00	910.58	909.50	909.87	909.73	910.06	909.88	910.93	910.60
30	909.01	907.90	---	910.16	---	909.91	909.78	909.50	910.20	909.76	910.92	910.52
31	908.95	---	---	910.29	---	910.53	---	909.39	---	910.14	910.92	---
MEAN	909.56	907.97	---	---	910.11	909.83	910.48	910.02	909.61	910.22	910.85	910.86
MAX	911.11	908.81	---	---	910.79	910.53	910.82	910.74	910.86	910.47	911.05	911.17
MIN	908.83	907.53	---	---	908.84	909.41	909.78	909.39	908.51	909.76	910.52	910.52

12439500 OKANOGAN RIVER AT OROVILLE, WA
(International gaging station)

LOCATION.--Lat 48°55'51", long 119°25'09", in SE¼SW¼ sec.27, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on left bank in Oroville, 20 ft (6 m) downstream from Burlington Northern trestle, 0.5 mi (0.8 km) downstream from Tonasket Creek, 1.7 mi (2.7 km) downstream from Osoyoos Lake, 3.2 mi (5.1 km) upstream from Similkameen River, and at mile 77.3 (124.4 km).

DRAINAGE AREA.--3,195 mi^2 (8,275 km^2).

PERIOD OF RECORD.--October 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is 900.00 ft (274.320 m), above mean sea level. Prior to Oct. 26, 1944, nonrecording gage at Zosel milldam 200 ft (61 m) upstream at same datum. Oct. 26, 1944, to Mar. 6, 1948, water-stage recorder on railroad trestle 20 ft (6 m) upstream at same datum. Auxiliary water-stage recorder 0.5 mi (0.8 km) downstream used during high-water periods since Apr. 10, 1948. May 15, 1946, to Apr. 9, 1948, auxiliary nonrecording gage at same site and datum. To convert to 1947 joint adjustment of U.S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft (0.074 m).

REMARKS.--Records excellent. Diversions made to irrigate approximately 44,000 acres (17,800 hm^2) in Canada and minor diversions in the United States above station. Natural regulation in several large lakes and artificial regulation in Okanagan Lake 46.7 mi (75.1 km) upstream for flood control and irrigation; also regulated by Zosel milldam at Oroville, 200 ft (61 m) above gage.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--34 years, 679 ft^3/s (19.23 m^3/s), 491,900 acre-ft/yr (607 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,730 ft^3/s (106 m^3/s) June 14, 1972; maximum gage height, 16.89 ft (5.148 m) June 2, 1972 (backwater from Similkameen River); minimum daily discharge, 2,270 ft^3/s (64.3 m^3/s) reverse flow May 29, 1948; minimum gage height, 3.98 ft (1.213 m) Mar. 1, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft^3/s (49.6 m^3/s) July 12; maximum gage height, 10.75 ft (3.277 m) June 20 (backwater from Similkameen River); minimum daily discharge, 100 ft^3/s (2.83 m^3/s) June 20 (reverse flow from Similkameen River), minimum gage height, 5.34 ft (1.628 m) Jan. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	670	706	376	94	895	1170	545	525	932	1360	712	1060
2	878	640	381	134	923	1140	550	515	911	1440	568	1060
3	994	574	381	144	958	1100	562	480	884	1530	535	1040
4	989	545	390	151	965	1040	568	435	839	1600	754	1040
5	973	515	400	162	1080	1010	568	460	802	1620	874	1040
6	962	485	405	166	1140	986	580	455	762	1620	986	1040
7	951	445	420	177	1130	965	592	476	682	1580	1050	1030
8	994	415	435	189	1110	937	676	478	604	1530	1060	1020
9	1060	395	440	197	1100	923	736	448	523	1570	1100	1010
10	1010	381	430	205	1090	923	736	683	529	1630	1140	1010
11	964	348	410	217	1070	951	724	822	500	1700	1150	1000
12	893	320	381	225	1010	921	718	1040	460	1710	1120	993
13	834	303	357	234	916	937	706	1260	442	1650	1090	979
14	772	294	334	242	825	930	688	1240	265	1600	1080	972
15	728	294	320	255	748	916	694	1230	135	1540	1060	958
16	674	298	303	289	682	916	676	1220	241	1500	1040	778
17	652	307	289	343	628	921	652	1160	285	1500	1060	658
18	661	320	281	376	646	909	652	1070	305	1480	1060	688
19	666	338	276	410	772	846	634	1240	345	1430	1050	712
20	682	366	272	683	881	811	628	1220	-100	1400	1050	818
21	704	390	276	993	986	784	634	1190	575	1400	1050	909
22	723	395	281	937	1080	766	658	1100	855	1360	1050	916
23	737	395	281	880	1150	760	658	1020	1020	1310	1050	902
24	742	400	289	818	1210	804	634	937	1120	1200	1040	881
25	760	390	289	761	1250	853	616	958	1150	1220	1060	860
26	772	390	294	712	1290	867	610	964	1190	1270	1060	832
27	772	415	303	694	1280	853	562	977	1300	1200	1070	811
28	778	395	303	730	1250	818	556	883	1380	1140	1080	790
29	797	376	201	772	1210	784	540	900	1400	1090	1100	772
30	804	371	100	818	---	628	530	960	1340	1030	1090	766
31	766	---	67	866	---	525	---	953	---	804	1080	---
TOTAL	25362	12206	9965	13874	29275	27694	18883	27299	21676	44014	31269	27345
MEAN	818	407	321	448	1009	893	629	881	723	1420	1009	912
MAX	1060	706	440	993	1290	1170	736	1260	1400	1710	1150	1060
MIN	652	294	67	94	628	525	530	435	-100	604	535	658
AC-FT	50310	24210	19770	27520	58070	54930	37450	54150	42990	87300	62020	54240

CAL YR 1975 TOTAL 244938.00 MEAN 671 MAX 1970 MIN -800 AC-FT 485800
WTR YR 1976 TOTAL 288862.00 MEAN 789 MAX 1710 MIN -100 AC-FT 573000

12442500 SIMILKAMEEN RIVER NEAR NIGHTHAWK, WA
(International gaging station)

LOCATION.--Lat 48°59'05", long 119°37'02", in NW¼ sec.7, T.40 N., R.26 E., Okanogan County, Hydrologic Unit 17020007, on left bank 1,000 ft (305 m) upstream from Oroville-Tonasket Irrigation District canal intake, 1.6 mi (2.6 km) northeast of Nighthawk, 3.8 mi (6.1 km) downstream from Palmer Creek, and at mile 15.8 (25.4 km).

DRAINAGE AREA.--3,550 mi² (9,190 km²), approximately.

PERIOD OF RECORD.--May 1911 to current year (prior to September 1928, mean monthly discharge included Oroville-Tonasket Irrigation District canal). Published as "near Oroville" 1911-28. Water temperatures January 1949 to September 1950, November 1961 to September 1970, at site 1.7 mi (2.7 km) upstream.

REVISED RECORDS.--WSP 1183: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,137.70 ft (346.771 m) above mean sea level, international joint adjustment of 1947. Prior to Sept. 11, 1928, staff gages at sites 7 mi (11.3 km) downstream (below Oroville-Tonasket Irrigation District canal) at various datums.

REMARKS.--Records excellent. Flow at high stages regulated by natural diversion into and release from Palmer Lake. Several small diversions above station for irrigation of about 2,900 acres (1,170 hm²) in the United States in 1946 and approximately 10,500 acres (4,250 hm²) in Canada in 1957.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--65 years, 2,324 ft³/s (65.82 m³/s), 1,684,000 acre-ft/yr (2,080 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,800 ft³/s (1,300 m³/s) June 1, 1972; maximum gage height, 18.78 ft (5.724 m) May 31, 1972; minimum discharge, 65 ft³/s (1.84 m³/s) Jan. 3, 1974, gage height, 1.59 ft (0.485 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,200 ft³/s (487 m³/s) June 20, gage height, 11.63 ft (3.545 m); minimum, 370 ft³/s (10.5 m³/s) Oct. 3, 4, 5, gage height, 2.20 ft (0.671 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	408	568	790	1260	1230	726	646	2800	8660	10400	2700	1730
2	405	574	761	1030	1190	684	652	3900	8020	9670	2770	1620
3	398	622	1530	950	1190	660	622	5470	7420	8790	2820	1550
4	382	677	3640	850	1060	560	628	5990	6960	8370	2890	1510
5	395	1250	3810	960	950	550	646	6660	6600	8530	2860	1460
6	415	1720	2500	1050	800	600	670	6900	6660	8590	3030	1460
7	460	1700	1920	1030	810	712	754	7140	7140	9140	3100	1620
8	527	1470	1700	1010	976	768	979	8930	8090	9460	3210	1540
9	500	1300	1890	1000	1160	747	1040	11700	10000	9190	3270	1440
10	478	1160	2790	1000	1130	719	1160	13600	11900	8180	3000	1360
11	456	1060	2760	960	1130	712	1360	14900	12200	7340	2730	1290
12	449	1000	2390	950	1160	684	1650	13700	11200	6960	2570	1230
13	452	984	2080	940	1130	664	1790	12100	10100	6570	2470	1170
14	452	944	1800	930	1060	658	1840	12400	9140	6060	2370	1140
15	445	984	1650	920	1020	646	1870	12300	9240	5680	2500	1110
16	440	1340	1520	930	1000	634	1830	12200	11300	5590	2440	1090
17	456	1510	1420	1050	984	658	1770	13400	13800	5650	2640	1060
18	478	1270	1320	1200	968	670	1730	13800	14400	5630	2770	1020
19	712	1040	1200	1200	944	733	1700	12300	15600	5220	2630	979
20	803	845	1100	1050	904	733	1690	11200	16600	4810	2460	958
21	810	700	1150	930	888	705	1710	10400	15100	4600	2400	930
22	768	768	1240	930	888	691	1700	10200	14100	4250	2240	895
23	705	904	1260	1050	866	677	1690	11100	12700	3750	2060	874
24	664	1030	1290	1070	880	670	1680	11700	11300	3600	1960	854
25	622	1200	1280	1080	866	652	1680	11300	10200	3640	1990	854
26	598	1480	1280	1030	852	652	1690	11400	9070	3430	2180	842
27	598	1350	1290	1030	831	646	1680	10300	8260	3210	2100	824
28	580	1200	1340	1190	810	640	1800	13000	8310	2980	2070	806
29	574	1000	1300	1340	782	634	1950	11900	9070	2800	2090	782
30	556	860	1340	1320	---	622	2220	10500	10600	2930	1990	758
31	556	---	1390	1280	---	622	---	9460	---	2830	1850	---
TOTAL	16542	32510	52731	32520	28459	20729	42827	322650	313740	187850	78240	34756
MEAN	534	1084	1701	1049	981	669	1428	10410	10460	6060	2524	1159
MAX	810	1720	3810	1340	1230	768	2220	14900	16600	10400	3270	1730
MIN	382	568	761	850	782	550	622	2800	6600	2800	1850	758
AC-FT	32810	64480	104600	64500	56450	41120	84950	640000	622300	372600	155200	68940

CAL YR 1975 TOTAL 662495 MEAN 2363 MAX 19100 MIN 275 AC-FT 1711000
WTR YR 1976 TOTAL 1163554 MEAN 3179 MAX 16600 MIN 382 AC-FT 2308000

12443600. Similkameen River at Oroville, Wash.

LOCATION.--Lat 48°56'05", long 119°26'27", in NE¼SW¼ sec.28, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020007, at 12th Avenue bridge at Oroville, 10.0 mi (16.1 km) east of Nighthawk, 10.8 mi (17.4 km) downstream from gaging station, and at mile 5.0 (8.0 km).

DRAINAGE AREA.--3,590 mi^2 (9,300 km^2), approximately.

PERIOD OF RECORD.--Water years 1949-50, 1967-1970 (partial-record station), 1975 to September 1976 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: January 1949 to September 1950, October 1966 to September 1970.

REMARKS.--Temperature records collected January 1949 to September 1950, October 1966 to September 1970 at county bridge 12.5 mi (20.1 km) upstream and 1.7 mi (2.7 km) upstream from gaging station, published as 12442500 "near Nighthawk."

COOPERATION.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
22...	1330	1500	170	8.2	7.6	29	3	12.3	B100	B6
29...	1315	1320	200	7.6	6.8	13	2	11.8	B200	<2
NOV										
12...	1300	1810	160	7.8	3.7	13	2	14.4	--	B6
19...	1300	1720	150	8.0	.7	25	3	14.9	B28	B2
DEC										
10...	1245	3500	130	7.6	2.3	33	14	14.9	98	<2
17...	1745	2240	170	7.9	.5	29	4	15.0	52	<2
JAN										
07...	1315	2420	180	7.2	.1	17	2	14.9	B2	<2
21...	1200	2100	160	7.6	.5	21	2	15.0	<2	<2
FEB										
04...	1125	1730	170	6.9	.7	17	3	15.2	<2	<2
25...	1230	1480	190	8.1	3.5	9	2	13.8	B2	<2
MAR										
10...	1310	1340	180	7.7	4.6	8	2	13.5	B4	B2
24...	1350	2060	210	7.9	6.4	4	3	12.6	<2	<2
APR										
14...	1300	2500	175	8.0	8.8	65	50	11.8	12	8
28...	1305	2370	190	8.1	10.7	21	4	11.1	B34	<2
MAY										
12...	1240	12200	89	7.6	8.3	80	40	13.5	0	B28
26...	1300	9720	95	7.7	9.8	50	15	12.7	B30	4
JUN										
09...	1300	9440	80	7.7	12.0	42	15	12.6	B20	B22
23...	1225	11500	81	7.8	10.8	38	20	13.0	--	B8
JUL										
14...	1245	6250	93	7.7	14.1	25	8	11.7	B10	<2
28...	1225	3670	112	7.6	17.7	13	4	10.0	B30	B4
AUG										
11...	1225	3330	115	7.8	18.5	25	2	10.5	52	B6
25...	1250	2580	140	7.4	16.4	21	4	9.8	<10	B4
SEP										
15...	1245	1620	170	8.0	15.4	13	2	10.5	<5	<2
22...	1250	1460	180	8.4	16.8	8	1	10.2	<2	<2

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT									
22...	.43	.04	.01	.00	0	2	6	.0	0
29...	.05	.03	.00	.00	4	2	4	.0	6
NOV									
12...	.12	.02	.00	.00	0	2	3	.0	0
19...	.01	.03	.01	.00	10	0	10	.0	0
DEC									
10...	.05	.10	.05	.00	0	4	2	.0	0
17...	.06	.03	.02	.01	0	2	5	.0	0
JAN									
07...	.02	.04	.01	.00	0	1	4	.0	0
21...	.03	.02	.01	.00	0	3	3	.0	0
FEB									
04...	.03	.06	.01	.00	0	2	3	.0	0
25...	.00	.03	.01	.00	0	3	8	.0	0
MAR									
10...	.01	.02	.02	.00	0	2	4	.0	0
24...	.01	.02	.01	.00	0	1	3	.0	0
APR									
14...	.03	.18	.10	.00	0	3	2	.0	0
28...	.00	.03	.01	.00	10	2	2	.0	0
MAY									
12...	.06	.14	.16	.01	0	2	5	.0	0
26...	.01	.05	.04	.00	0	2	5	.0	0
JUN									
09...	.00	.05	.05	.00	0	1	3	.0	0
23...	.01	.09	.07	.00	0	2	2	.0	0
JUL									
14...	.00	.05	.02	.00	10	2	2	.0	0
28...	.01	.04	.01	.00	0	3	4	.0	0
AUG									
11...	.00	.04	.01	.00	0	2	5	.0	0
25...	.00	.01	.02	.00	0	1	8	.0	0
SEP									
15...	.01	.03	.01	.00	0	1	5	.0	0
22...	.00	.01	.01	.00	0	1	6	.0	10

B Results based upon colony counts outside the ideal range.

12444700 AENEAS LAKE NEAR TONASKET, WA

LOCATION.--Lat 48°40'37", long 119°30'28", in SE¼NW¼ sec.25, T.37 N., R.26 E., Okanogan County, Hydrologic Unit 17020006, at boat launching ramp on east shore 4.0 mi (6.4 km) southwest of Tonasket.

DRAINAGE AREA.--32.4 mi² (83.9 km²).

PERIOD OF RECORD.--February 1964 to current year (fragmentary).

GAGE.--Nonrecording gage. Altitude of gage is 1,390 ft (424 m), from topographic map. Prior to Mar. 28, 1968, nonrecording gage on west shore, Mar. 28, 1968 to Nov. 28, 1972, nonrecording gage at present site, and Nov. 28, 1972 to Apr. 6, 1974 water-stage recorder 500 ft (150 m) northeast of present site, all at present datum.

REMARKS.--Pumping from lake and nearby ground-water wells during irrigation season. Diversion from Okanogan River into lake by pumping during irrigation season beginning June 1970.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.38 ft (3.469 m) Sept. 19, 1976; minimum observed, -10.68 ft (-3.255 m) Oct. 10, 16, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.38 ft (3.469 m) Sept. 19; minimum, 9.26 ft (2.822 m) June 29.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---		---			---	---	10.12	---	---	---
2		---		---			---	---	---	---	10.80	---
3		---		---			---	---	---	9.32	---	10.40
4		---		---			---	10.76	---	---	---	---
5		---		10.56			---	---	10.06	---	10.84	---
6		---		---			---	---	---	9.40	---	10.64
7		---		---			---	10.77	---	---	---	---
8		---		---			---	---	---	9.42	9.94	---
9		---		---			---	---	9.98	---	---	---
10		---		---			---	10.77	---	---	---	10.72
11		---		---			---	---	---	---	---	---
12		---		---			---	---	9.86	9.46	9.98	---
13		---		---			---	---	---	---	---	---
14		---		---			---	10.76	---	---	---	---
15		---		---			---	---	9.78	---	10.08	11.06
16		---		---			---	---	---	---	---	---
17		---		---			---	---	---	---	---	---
18		---		---			---	---	9.78	---	---	---
19		---		---			---	10.44	---	---	---	11.38
20		10.41		---			---	---	---	9.68	---	---
21		---		---			---	---	9.50	---	10.16	---
22		---		---			---	---	---	---	10.20	---
23		---		---			---	10.20	---	---	---	---
24		---		---			---	---	---	---	10.20	---
25		---		---			---	---	---	9.74	---	---
26		---		---			---	10.08	9.36	---	---	---
27		---		---			---	---	---	9.76	---	---
28		---		---			---	---	---	---	10.16	---
29		---		---			10.76	---	9.26	---	---	---
30		---		---			10.76	---	---	---	---	---
31		---		---			---	---	---	9.78	10.18	---
MEAN		---		---			---	---	---	---	---	---
MAX		---		---			---	---	---	---	---	---
MIN		---		---			---	---	---	---	---	---

12444990 OKANOGAN RIVER AT JANIS, WA

LOCATION.--Lat 48°38'57", long 119°29'10", in W½ sec.5, T.36 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, at U.S. Highway 97 crossing, 0.3 mi (0.5 km) northwest of Janis, 1.5 mi (2.4 km) upstream from "near Tonasket" gaging station and 4 mi (6.4 km) south of Tonasket.

DRAINAGE AREA.--96.6 mi² (250.2 km²).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT									
22...	1250	1670	240	7.1	9.7	17	7	11.2	B4500
29...	1200	1570	260	8.1	8.7	17	4	10.9	B300
NOV									
12...	1200	1540	210	7.6	4.3	17	3	13.4	--
19...	1225	1680	200	8.0	1.7	21	8	14.1	B60
DEC									
10...	1200	2620	170	7.5	2.8	33	8	13.7	290
17...	1710	2200	190	7.8	.9	25	7	14.6	B80
JAN									
07...	1225	1380	240	7.3	.5	17	3	14.0	B2
21...	1130	2420	--	--	.3	--	--	14.7	B2
FEB									
04...	1055	2220	230	7.1	.6	13	4	14.2	B8
25...	1200	2220	270	8.3	3.9	9	4	13.8	B12
MAR									
10...	1230	1830	270	7.9	6.6	8	5	13.7	>160
24...	1310	1740	300	8.1	7.2	8	5	12.7	B16
APR									
14...	1220	2630	225	8.1	10.0	21	10	11.2	140
28...	1220	2340	270	8.1	11.9	13	9	10.7	44
MAY									
12...	1140	14100	100	7.6	10.0	85	55	12.6	400
26...	1215	11100	122	7.6	11.7	46	15	11.3	B100
JUN									
09...	1210	8800	100	7.7	14.3	38	15	11.6	540
23...	1140	13400	91	7.6	13.2	42	25	12.0	210
JUL									
14...	1200	7500	135	7.7	16.9	25	7	10.5	B600
28...	1130	4250	160	8.0	19.0	13	4	9.0	B350
AUG									
11...	1140	4000	169	8.0	20.2	29	6	10.0	>900
25...	1150	3120	200	8.0	18.3	21	4	8.9	B1200
SEP									
15...	1155	2190	240	8.2	17.0	21	5	10.8	B80
22...	1150	1930	250	8.4	18.1	25	3	9.7	B700

DATE	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT								
22...	240	.03	.00	.05	.19	.24	.03	.00
29...	<5	.06	.00	.04	.22	.26	.03	.00
NOV								
12...	B2	.05	.00	.02	.14	.16	.01	.00
19...	<2	.02	.00	.04	.14	.18	.02	.00
DEC								
10...	B18	.31	.00	.09	.10	.19	.02	.01
17...	<2	.10	.00	.14	.50	.64	.03	.00
JAN								
07...	<2	.06	.00	.06	.23	.29	.01	.00
21...	<2	.09	.00	.07	.31	.38	.03	.00
FEB								
04...	<2	.21	.01	.05	.18	.23	.02	.00
25...	B2	.02	.00	.11	.47	.58	.02	.00
MAR								
10...	56	.03	.01	.03	.25	.28	.02	.00
24...	<2	.03	.00	.04	.27	.31	.03	.00
APR								
14...	44	.01	.00	.04	.25	.29	.06	.01
28...	4	.01	.00	.05	.19	.24	.12	.00
MAY								
12...	70	.04	.02	.13	.43	.56	.31	.00
26...	<20	.01	.01	.07	.21	.28	.09	.00
JUN								
09...	64	.02	.00	.04	.22	.26	.07	.00
23...	B22	.03	.00	.12	.19	.31	.11	.00
JUL								
14...	B20	.00	.01	.07	.14	.21	.03	.00
28...	62	.03	.00	.07	.39	.46	.02	.00
AUG								
11...	B26	.02	.00	.10	.45	.55	.04	.00
25...	80	.01	.00	.02	.17	.19	.03	.00
SEP								
15...	B8	.01	.00	.04	.26	.30	.03	.00
22...	B280	.01	.00	.05	.34	.39	.03	.00

B Results based upon colony counts outside the ideal range.

12445000 OKANOGAN RIVER NEAR TONASKET, WA

LOCATION.--Lat 48°37'57", long 119°27'38", in lot 3, sec.8, T.36 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on right bank 1,000 ft (305 m) upstream from Chewiliken Creek, 5.2 mi (8.4 km) south of Tonasket, and at mile 50.8 (81.7 km).

DRAINAGE AREA.--7,260 mi² (18,000 km²), approximately.

PERIOD OF RECORD.--April 1929 to current year.

REVISED RECORDS.--WSP 862: 1937. WSP 1316: 1934(M), 1938(M). WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 860.78 ft (262.366 m) above mean sea level.

REMARKS.--Records excellent except those for period of no gage-height record June 10 to Aug. 19, which are fair. Diversions above station for irrigation of about 10,700 acres (43 km²) in the United States and 55,000 acres (220 km²) in Canada. Flow affected by regulation of Okanagan and Skaha Lakes and by natural storage in other lakes.

AVERAGE DISCHARGE.--47 years, 2,993 ft³/s (84.76 m³/s), 2,168,000 acre-ft/yr (2,670 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,700 ft³/s (1,270 m³/s) June 2, 1972, gage height, 22.54 ft (6.870 m); minimum recorded, 126 ft³/s (3.57 m) Sept. 5, 1931, gage height, 3.43 ft (1.045 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 15,500 ft³/s (439 m³/s) June 21; minimum discharge, 945 ft³/s (26.8 m³/s) Nov. 30, gage height, 4.85 ft (1.478 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	1480	1270	1500	2240	2100	1450	2950	9500	11200	3600	2910
2	1160	1430	1470	1450	2220	2040	1460	3630	8780	11100	3400	2790
3	1410	1370	1440	1200	2220	1910	1460	4920	8120	10300	3300	2680
4	1440	1380	2710	1220	2210	1700	1460	5700	7540	9800	3500	2620
5	1430	1450	4130	1360	2050	1750	1490	6250	7080	9600	3700	2580
6	1430	2100	3520	1370	1950	1790	1510	6790	6870	9900	3900	2530
7	1450	2300	2670	1370	1980	1840	1540	6750	7050	10200	4200	2600
8	1500	2170	2380	1360	2040	1860	1670	7700	7670	10400	4250	2670
9	1650	1960	2410	1400	2140	1890	1890	9840	8780	10300	4300	2580
10	1650	1800	2690	1380	2250	1890	1980	11700	10600	9600	4350	2480
11	1580	1640	3050	1430	2320	1900	2120	13400	11500	8900	4000	2410
12	1500	1540	3100	1360	2360	1860	2330	14000	11600	8400	3750	2340
13	1430	1450	2870	1430	2270	1860	2550	12900	11000	7900	3600	2280
14	1380	1430	2820	1390	2130	1830	2640	12300	10000	7500	3500	2230
15	1330	1390	2550	1380	2000	1810	2690	12600	8900	7100	3500	2190
16	1300	1500	2350	1420	1910	1800	2690	12300	9300	7000	3500	2130
17	1260	1890	2200	1450	1830	1810	2620	12600	11000	6900	3600	1880
18	1270	1890	2040	1620	1770	1900	2570	13800	12500	6800	3650	1840
19	1310	1690	2020	1800	1820	1880	2510	13300	13600	6700	3600	1820
20	1570	1490	2020	1770	1910	1840	2480	12200	14600	6400	3570	1820
21	1640	1360	2020	2160	1980	1780	2460	11200	15500	6100	3450	1950
22	1670	1350	1930	2070	2050	1730	2490	10700	14300	5700	3400	1930
23	1630	1370	1850	2000	2120	1700	2480	10600	13400	5500	3240	1920
24	1590	1530	1860	2010	2180	1740	2470	11600	12500	5200	3090	1870
25	1590	1590	1840	2100	2230	1770	2440	11600	11700	4900	3110	1840
26	1560	1870	1760	1920	2260	1770	2420	11100	10700	4950	3210	1810
27	1540	1980	1750	1870	2290	1780	2370	10400	9600	4550	3340	1770
28	1550	1860	1750	1890	2240	1750	2350	11600	9000	4250	3300	1730
29	1560	1700	1770	2130	2160	1700	2450	12700	9300	4000	3240	1690
30	1550	1260	1570	2240	---	1670	2630	11400	10300	3850	3240	1650
31	1520	---	1550	2250	---	1460	---	10400	---	3900	3070	---
TOTAL	45580	49220	69360	51320	61130	56110	65670	318930	312290	228900	110460	65540
MEAN	1470	1641	2237	1655	2108	1810	2189	10290	10410	7384	3563	2185
MAX	1670	2300	4130	2250	2360	2100	2690	14000	15500	11200	4350	2910
MIN	1130	1260	1270	1200	1770	1460	1450	2950	6870	3850	3070	1650
AC-FT	90410	97630	137600	101800	121300	111300	130300	632600	619400	454000	219100	130000

CAL YR 1975 TOTAL 1096065 MEAN 3003 MAX 16300 MIN 660 AC-FT 2174000
WTR YR 1976 TOTAL 1434510 MEAN 3919 MAX 15500 MIN 1130 AC-FT 2845000

12446000 OKANOGAN RIVER AT OKANOGAN, WA

LOCATION.--Lat 48°21'48", long 119°34'36", in SW¼NW¼ sec.16, T.33 N., R.26 E., Okanogan County, Hydrologic Unit 17020006, at highway bridge at Okanogan, 0.2 mi (0.3 km) upstream from Salmon Creek.

DRAINAGE AREA.--7,880 mi² (20,409 km²).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT									
21...	1400	1690	280	7.3	10.5	17	10	10.8	--
28...	1410	1660	280	8.2	8.3	13	3	11.8	--
NOV									
11...	1340	1670	200	7.9	3.5	25	5	13.4	B50
18...	1345	1860	230	8.2	3.9	17	5	13.4	180
DEC									
09...	1245	2480	190	7.9	1.9	50	5	13.4	56
16...	1345	2350	220	7.8	.1	25	4	14.4	--
JAN									
06...	1320	1500	260	7.1	.5	17	5	13.9	330
20...	1310	1850	230	8.1	.7	17	4	14.5	70
FEB									
03...	1140	2280	240	7.0	2.1	17	4	13.8	B80
24...	1315	2280	270	8.1	4.8	17	7	13.2	B60
MAR									
09...	1320	2020	220	7.9	4.4	13	5	13.7	<5
23...	1355	1770	290	8.3	6.7	58	6	13.3	B32
APR									
13...	1405	2590	255	8.1	11.9	17	10	11.0	>22
27...	1340	2360	240	8.2	12.2	25	10	10.9	B55
MAY									
11...	1350	14700	103	7.5	11.2	120	60	11.2	--
25...	1330	11900	102	7.6	10.9	55	20	11.5	B90
JUN									
08...	1345	8960	128	7.6	15.9	33	10	10.0	310
22...	1325	14700	83	7.6	13.0	50	35	11.0	B1300
JUL									
13...	1310	7990	163	8.5	17.0	29	11	9.6	B100
27...	1310	4490	170	8.0	19.8	13	6	8.6	--
AUG									
10...	1315	4210	161	8.0	20.0	33	4	9.1	B180
24...	1350	3140	195	8.1	20.2	21	3	9.1	<20
SEP									
14...	1320	2230	239	8.4	16.7	25	4	9.8	<10
21...	1325	1970	257	8.4	18.9	21	3	9.4	<2

DATE	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT								
21...	--	.04	.00	.10	.33	.43	.03	.00
28...	--	.04	.00	.04	.18	.22	.02	.00
NOV								
11...	B2	.04	.00	.03	.19	.22	.01	.00
18...	B24	.28	.00	.07	.13	.20	.02	.00
DEC								
09...	B14	.07	.01	.06	.22	.28	.03	.01
16...	15	.09	.00	.07	.17	.24	.02	.01
JAN								
06...	B18	.08	.01	.05	.13	.18	.02	.01
20...	<2	.09	.00	.06	.20	.26	.02	.01
FEB								
03...	<2	.60	.01	.16	.46	.62	.03	.00
24...	B6	.01	.01	.05	.32	.37	.04	.00
MAR								
09...	<2	.02	.00	.06	.23	.29	.03	.01
23...	B2	.01	.01	.05	.27	.32	.04	.00
APR								
13...	B24	.07	.00	.04	.28	.32	.05	.00
27...	18	.09	.00	.04	.25	.29	.05	.00
MAY								
11...	--	.03	.01	.14	.50	.64	.38	.00
25...	B30	.01	.01	.06	.21	.27	.10	.00
JUN								
08...	--	.01	.00	.03	.21	.24	.07	.00
22...	B70	.02	.01	.13	.23	.36	.15	.00
JUL								
13...	B30	.00	.00	.14	.10	.24	.05	.00
27...	--	.02	.01	.13	.64	.77	.03	.01
AUG								
10...	54	.03	.00	.11	.40	.51	.03	.00
24...	B10	.01	.00	.04	.14	.18	.02	.00
SEP								
14...	<2	.01	.00	.06	.42	.48	.03	.00
21...	<2	.00	.00	.04	.28	.32	.03	.00

B Results based upon colony counts outside the ideal range.

12447200 OKANOGAN RIVER AT MALOTT, WA

LOCATION.--Lat 48°16'53", long 119°42'12", in SW¼ sec.9, T.32 N., R.25 E., Okanogan County, Hydrologic Unit 17020006, on right bank 75 ft (23 m) upstream from highway bridge at Malott, 0.1 mi (0.2 km) upstream from Loup Loup Creek, and at mile 17.0 (27.4 km).

DRAINAGE AREA.--8,080 mi² (20,930 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958 to current year. April 1958 to September 1965, published as "near Malott." Records published for both sites December 1965 to July 1967.

REVISED RECORDS.--WDR WA-75-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 790 ft (241 m), from topographic map. April 1958 to November 1965, water-stage recorder at site 3.9 mi (6.3 km) downstream at mean sea level datum.

REMARKS.--Records good except those for winter periods, which are fair. Diversions above station for irrigation of about 22,000 acres (89 km²) in the United States and 55,000 acres (220 km²) in Canada. Flow regulated by Okanagan and Skaha Lakes and by natural storage in other lakes.

AVERAGE DISCHARGE.--18 years, 3,223 ft³/s (91.28 m³/s), 2,335,000 acre-ft/yr (2,880 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,600 ft³/s (1,290 m³/s) June 3, 1972, gage height, 22.16 ft (6.754 m); minimum observed 288 ft³/s (8.16 m³/s) Sept. 4, 1970, gage height, 2.03 ft (0.619 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,100 ft³/s (456 m³/s) June 21, gage height, 11.73 ft (3.575 m); minimum, 1,060 ft³/s (30.0 m³/s) Oct. 1, gage height, 3.25 ft (0.991 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1120	1570	1300	1700	2330	2200	1560	2720	10300	11600	3730	3030
2	1150	1520	1350	1650	2310	2130	1510	3200	9530	11500	3550	2880
3	1220	1480	1500	1550	2300	2040	1500	4330	8860	10800	3440	2760
4	1440	1450	1500	1300	2290	1830	1500	5720	8260	10100	3450	2670
5	1460	1450	3590	1320	2200	1750	1520	6310	7750	9790	3720	2630
6	1460	1690	4070	1380	2100	1800	1550	6970	7430	9930	3840	2610
7	1460	2280	3230	1500	2050	1870	1570	7180	7430	9980	4210	2560
8	1500	2300	2560	1500	2140	1910	1610	7580	7920	10500	4320	2690
9	1580	2130	2480	1500	2200	1960	1790	9210	8790	10700	4400	2650
10	1710	1950	2500	1500	2260	2010	1950	11400	10500	10500	4460	2550
11	1660	1800	3130	1500	2350	2010	2030	13200	11900	9490	4210	2460
12	1590	1670	3200	1550	2440	1890	2210	14500	12100	8780	3930	2390
13	1520	1580	3040	1460	2450	1880	2420	13900	11300	8390	3750	2330
14	1460	1510	2690	1520	2300	1860	2580	12900	10300	8000	3640	2270
15	1410	1510	2600	1550	2160	1840	2660	13100	9300	7510	3570	2230
16	1370	1480	2550	1580	2050	1830	2690	13000	9460	7150	3660	2180
17	1340	1670	2350	1620	1980	1840	2650	13100	11200	7060	3600	2060
18	1310	1990	2200	1670	1890	1920	2610	14100	13000	7110	3740	1890
19	1330	1870	2100	1780	1860	1970	2530	14300	13900	7000	3870	1850
20	1420	1680	2100	1890	1920	1880	2510	13200	15000	6620	3740	1830
21	1670	1510	2100	1930	2000	1840	2470	12100	15900	6290	3570	1880
22	1690	1430	2100	2190	2060	1780	2480	11400	15400	6110	3500	1960
23	1710	1430	2000	2130	2140	1750	2490	11100	14700	5750	3370	1950
24	1660	1490	2000	2090	2200	1760	2490	11900	13500	5270	3200	1910
25	1660	1630	2000	2060	2270	1800	2480	12300	12300	5000	3140	1870
26	1650	1700	1950	2220	2300	1790	2430	11800	11200	5030	3190	1840
27	1610	2020	1900	2000	2350	1790	2400	11200	10200	4820	3350	1820
28	1600	2000	1900	1950	2330	1780	2360	11500	9530	4510	3400	1780
29	1650	1720	1900	2060	2260	1740	2380	13300	9590	4220	3310	1740
30	1640	1540	1900	2280	---	1700	2510	12500	10400	3970	3300	1700
31	1600	---	1750	2320	---	1670	---	11300	---	4010	3200	---
TOTAL	46650	51050	71540	54250	63490	57820	65440	330320	326950	237490	113360	66970
MEAN	1505	1702	2308	1750	2189	1865	2181	10660	10900	7661	3657	2232
MAX	1710	2300	4070	2320	2450	2200	2690	14500	15900	11600	4460	3030
MIN	1120	1430	1300	1300	1860	1670	1500	2720	7430	3970	3140	1700
AC-FT	92530	101300	141900	107600	125900	114700	129800	655200	648500	471100	224800	132800

CAL YR 1975 TOTAL 1160286 MEAN 3179 MAX 17300 MIN 600 AC-FT 2301000
WTR YR 1976 TOTAL 1485330 MEAN 4058 MAX 15900 MIN 1120 AC-FT 2946000

12447200 OKANOGAN RIVER AT MALOTT, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-62, 1963-70 (partial-record station), 1972, 1975 to September 1976 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: November 1969 to June 1971.

REMARKS.--Water years 1959 to 1963 published as 12447300 "near Brewster", 1964 to 1966 published as 12447300 "near Malott."

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
21...	1335	1690	280	8.1	10.4	13	4	10.5	--	--
28...	1330	1590	280	8.0	8.5	17	2	11.3	--	--
NOV										
11...	1235	1800	200	7.9	3.4	29	5	12.9	B100	<5
18...	1315	2020	220	8.2	3.8		4	13.1	190	B4
DEC										
09...	1225	2500	180	7.9	2.3	54	6	13.4	100	B12
16...	1325	2550	210	8.0	.2	29	<1	14.6	--	16
JAN										
06...	1305	1380	280	7.2	.3	17	2	13.8	70	B10
20...	1245	1890	240	8.0	.7	13	3	14.2	40	B4
FEB										
03...	1120	2300	230	6.8	1.9	21	3	13.9	B70	B4
24...	1245	2230	280	8.1	4.7	13	3	13.1	B15	<2
MAR										
09...	1250	1980	230	7.8	5.6	8	2	13.2	<2	<2
23...	1305	1760	290	8.3	6.3	13	4	12.7	B28	B8
APR										
13...	1340	2470	262	8.2	11.9	17	8	10.8	>20	12
27...	1315	2400	250	8.1	11.8	13	7	10.6	B40	4
MAY										
11...	1315	13400	107	7.3	11.1	121	55	11.2	B120	100
25...	1305	12400	104	7.6	10.9	65	20	11.1	B80	B25
JUN										
08...	1325	8010	130	7.5	16.2	33	10	9.7	160	B30
22...	1300	15400	80	7.5	12.3	55	35	11.1	B700	B120
JUL										
13...	1240	8380	128	7.9	17.2	29	14	9.5	B80	B30
27...	1245	4800	160	8.0	20.0	13	5	8.8	--	--
AUG										
10...	1250	4480	161	7.9	20.0	29	4	9.0	B140	88
24...	1320	3200	199	8.1	19.9	21	2	8.8	>10	B25
SEP										
14...	1245	2280	242	8.3	16.9	25	4	9.4	<20	<2
21...	1300	1880	260	8.3	18.8	13	3	9.1	<2	<2

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT									
21...	.05	.07	.02	.01	0	2	9	.0	0
28...	.05	.03	.02	.00	2	2	9	.0	4
NOV									
11...	.08	.06	.02	.00	0	4	4	.0	0
18...	.03	.03	.01	.00	<10	1	4	.0	10
DEC									
09...	.10	.06	.04	.01	0	4	10	.0	10
16...	.10	.05	.02	.01	0	2	6	.1	0
JAN									
06...	.10	.04	.02	.01	0	1	7	.0	0
20...	.10	.05	.02	.01	0	3	6	.0	10
FEB									
03...	.63	.09	.02	.00	0	2	6	.0	0
24...	.01	.07	.03	.00	0	3	4	.0	0
MAR									
09...	.04	.02	.02	.00	0	2	7	.0	0
23...	.28	.06	.03	.00	0	1	3	.0	0
APR									
13...	.00	.04	.04	.00	0	1	2	.0	0
27...	.00	.04	.03	.00	0	1	1	.0	0
MAY									
11...	.04	.14	.23	.01	0	3	4	.0	0
25...	.02	.07	.07	.00	0	5	6	.0	10
JUN									
08...	.01	.03	.04	.00	0	1	4	.0	0
22...	.02	.13	.11	.00	0	2	2	.0	0
JUL									
13...	.00	.04	.06	.00	0	2	7	.0	0
27...	.01	.07	.03	.00	0	3	10	.0	0
AUG									
10...	.01	.04	.03	.00	0	4	8	.0	0
24...	.01	.05	.03	.00	0	1	11	.0	0
SEP									
14...	.01	.04	.03	.00	0	2	5	.0	10
21...	.00	.04	.03	.00	0	4	9	.0	10

B Results based upon colony counts outside the ideal range.

12447374 METHOW RIVER BELOW GATE CREEK NEAR MAZAMA, WA

LOCATION.--Lat 48°37'46", long 120°27'50", in SW¼SW¼ sec.10, T.36 N., R.19 E., Okanogan County, Hydrologic Unit 17020008, at gate Creek campground 0.2 mi (0.3 km) downstream from Gate Creek, 2.5 mi (4.0 km) upstream from Early Winters Creek and 3.9 mi (6.3 km) northwest of Mazama, and at mile 69.8 (112.3 km).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)
OCT								
22...	1030	92	110	6.8	7.3	8	3	9.6
29...	1000	93	100	8.0	6.6	17	6	10.0
NOV								
12...	0950	238	101	7.4	4.4	4	5	11.6
19...	0950	202	100	7.7	2.9	4	2	12.1
DEC								
10...	1010	666	104	7.6	1.7	8	2	12.3
17...	0915	480	110	7.6	.0	13	1	13.0
JAN								
21...	0920	217	110	7.7	1.0	4	4	12.8
FEB								
04...	0905	261	140	6.8	.0	4	2	13.7
25...	0940	141	110	7.5	2.3	4	2	12.0
MAR								
10...	1000	111	98	7.2	3.7	4	1	11.7
24...	1005	145	120	7.4	3.4	4	2	11.6
APR								
14...	0950	662	120	7.5	5.1	8	7	11.9
28...	1010	545	117	7.7	6.8	8	5	11.2
MAY								
12...	0940	2930	81	7.3	6.3	21	4	12.3
26...	1010	2080	100	7.4	6.8	17	5	11.5
JUN								
09...	1015	2860	72	7.4	8.1	8	4	12.0
23...	0935	2910	70	7.4	7.4	4	2	11.8
JUL								
14...	0935	1770	65	7.6	8.1	8	2	11.6
28...	0930	920	65	7.6	8.9	0	2	10.8
AUG								
11...	0935	837	77	7.5	10.3	13	2	11.0
25...	0940	540	79	7.6	9.7	4	2	10.0
SEP								
15...	0930	238	96	7.6	9.4	4	1	10.3
22...	0935	208	100	7.6	9.6	0	1	10.2

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT									
22...	B320	<2	52	0	18	1.7	6.0	.4	68
29...	B40	<2	52	2	18	1.6	2.7	.4	60
NOV									
12...	B20	<2	47	0	16	1.7	1.9	.6	61
19...	B2	<2	51	5	17	2.1	2.2	.2	56
DEC									
10...	B16	<2	51	1	17	2.0	2.2	.4	60
17...	B16	<2	49	0	17	1.7	2.0	.4	61
JAN									
21...	B8	<2	52	1	17	2.4	2.4	1.1	62
FEB									
04...	40	B14	64	0	20	3.5	2.8	.7	80
25...	<2	<2	53	0	18	1.9	2.0	.5	67
MAR									
10...	B10	<2	55	0	18	2.4	2.2	.3	69
24...	--	--	52	0	18	1.8	2.1	.4	65
APR									
14...	B14	<2	53	0	18	1.9	2.4	.4	68
28...	B14	<2	57	3	20	1.8	2.0	.4	66
MAY									
12...	B14	<2	37	1	13	1.1	1.2	.3	44
26...	B28	<2	44	0	14	2.3	1.4	.7	58
JUN									
09...	B32	<2	32	4	11	1.2	1.2	.3	35
23...	B16	<2	30	0	10	1.2	1.0	.2	36
JUL									
14...	B20	<2	27	0	9.8	.7	.9	.3	33
28...	B4	<2	30	7	10	1.2	1.5	.6	28
AUG									
11...	56	B2	32	6	11	1.0	1.9	.8	31
25...	54	<2	38	2	13	1.4	1.6	.4	44
SEP									
15...	64	<2	41	0	14	1.5	1.8	.4	53
22...	B16	<2	44	0	15	1.6	1.8	.4	55

B Results based upon colony counts outside the ideal range.

12447374 METHOW RIVER BELOW GATE CREEK NEAR MAZAMA, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	ALKA- LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
OCT								
22...	56	17	3.7	.2	.05	.04	.00	.00
29...	49	1.0	3.8	.6	.05	.02	.00	.00
NOV								
12...	50	3.9	4.9	.2	.04	.03	.00	.00
19...	46	1.8	4.7	.7	.04	.03	.00	.00
DEC								
10...	49	2.4	2.6	.8	.05	.03	.00	.00
17...	50	2.5	4.0	2.4	.05	.05	.01	.00
JAN								
21...	51	2.0	4.7	.9	.05	.06	.01	.00
FEB								
04...	66	20	5.9	.7	.17	.01	.00	.00
25...	55	3.4	5.9	.6	.03	.04	.01	.00
MAR								
10...	57	7.0	5.2	.3	.03	.02	.00	.00
24...	53	4.1	4.7	.6	.04	.02	.00	.00
APR								
14...	56	3.4	4.9	.9	.07	.03	.01	.00
28...	54	2.1	3.9	.1	.05	.03	.00	.00
MAY								
12...	36	3.5	5.0	.5	.05	.01	.01	.00
26...	48	3.7	1.6	1.0	.07	.04	.01	.00
JUN								
09...	29	2.2	4.1	.3	.03	.04	.01	.00
23...	30	2.3	1.9	.5	.02	.02	.01	.00
JUL								
14...	27	1.3	2.6	.5	.00	.03	.00	.00
28...	23	1.1	3.9	1.0	.70	.17	.01	.00
AUG								
11...	25	1.6	4.3	.9	.03	.05	.01	.00
25...	36	1.8	4.4	.2	.01	.03	.00	.00
SEP								
15...	43	2.1	5.6	.5	.01	.04	.01	.00
22...	45	2.2	4.0	.2	.00	.04	.00	.00

12447385 METHOW RIVER AT WEEMAN BRIDGE NEAR MAZAMA, WA

LOCATION.--Lat 48°32'40", long 120°19'20", in SW¼SE¼ sec.10, T.35 N., R.20 E., Okanogan County, Hydrologic Unit 17020008, at Weeman bridge on State Highway 20, 5.0 mi (8.0 km) southeast of Mazama, 7.6 mi (12.2 km) downstream from Early Winters Creek and at mile 59.7 (96.1 km).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)
OCT											
22...	0910	70	110	7.1	6.2	8	3	11.2	B35	<2	60
29...	0845	73	110	8.0	6.6	13	1	10.8	B120	B2	57
NOV											
12...	0905	136	101	7.6	4.1	4	3	11.8	B65	B2	45
19...	0910	120	100	7.8	1.4	4	1	12.5	B12	<2	53
DEC											
10...	0920	376	97	7.7	1.9	8	1	12.4	B26	<2	40
17...	0850	239	100	7.8	.0	13	1	13.1	B18	B2	46
JAN											
07...	0850	141	120	7.4	.2	13	1	13.5	B10	<2	50
21...	0845	132	110	7.8	.2	4	1	14.0	B8	<2	54
FEB											
04...	0835	147	140	6.7	.0	4	2	13.7	>40	B4	65
25...	0900	120	120	7.5	2.8	4	1	12.4	B4	<2	56
MAR											
10...	0915	108	102	7.3	3.7	8	1	12.3	B12	<2	57
24...	0910	130	120	7.5	3.0	0	2	12.0	--	--	54
APR											
14...	0900	420	122	7.7	4.5	8	7	12.2	B4	<2	55
28...	0920	322	118	7.6	6.3	17	7	11.5	B20	<2	57
MAY											
12...	0900	4460	75	7.3	5.3	13	4	12.4	B26	<2	35
26...	0920	1950	77	7.1	6.1	8	3	11.7	B20	B2	33
JUN											
09...	0930	2690	65	7.3	7.6	13	3	12.0	120	<2	29
23...	0855	3200	65	7.4	7.2	0	2	12.1	B16	B4	27
JUL											
14...	0850	1250	64	7.3	8.2	8	1	11.9	B22	B2	28
28...	0845	540	75	7.6	8.5	0	4	10.8	B22	<2	32
AUG											
11...	0900	420	76	7.5	9.8	8	1	11.0	B58	<2	32
25...	0845	392	85	7.6	9.9	4	1	10.2	100	B2	39
SEP											
15...	0850	103	105	7.8	8.5	8	1	10.8	72	<2	47
22...	0840	106	112	7.7	8.5	8	1	10.6	B2	<2	48

B Results based upon colony counts outside the ideal range.

12447385 METHOW RIVER AT WEEMAN BRIDGE NEAR MAZAMA, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	TOTAL NITRATE (N) (MG/L)
OCT											
22...	6	20	2.4	2.4	.4	66	54	8.4	4.8	1.4	.20
29...	2	19	2.2	2.2	.4	67	55	1.1	4.5	.2	.07
NOV											
12...	0	15	1.9	2.2	.3	60	49	2.4	5.2	.6	.08
19...	6	18	2.0	2.1	.4	58	48	1.5	--	--	.04
DEC											
10...	0	14	1.2	2.0	.5	53	43	1.7	3.5	.6	.08
17...	2	16	1.5	1.9	.2	54	44	1.4	3.7	.2	.03
JAN											
07...	0	17	1.9	2.4	.6	61	50	3.9	7.0	.7	.04
21...	1	17	2.7	2.7	.9	64	53	1.6	5.3	.5	.06
FEB											
04...	0	20	3.7	2.7	.7	79	65	25	5.8	.3	.29
25...	0	19	2.0	2.4	.5	68	56	3.4	5.4	.5	.05
MAR											
10...	1	19	2.3	2.2	.4	68	56	5.5	5.3	.2	.05
24...	0	18	2.1	2.2	.4	67	55	3.4	4.7	.9	.04
APR											
14...	0	18	2.5	2.6	.3	69	57	2.2	5.0	.8	.24
28...	1	18	2.9	2.1	.4	68	56	2.7	5.0	.6	.08
MAY											
12...	0	12	1.1	1.0	.3	42	34	3.4	3.3	.5	.04
26...	0	11	1.4	1.2	.3	40	33	5.1	3.5	.4	.07
JUN											
09...	0	9.6	1.2	1.1	.2	35	29	2.8	2.9	.4	.02
23...	0	8.9	1.2	1.0	.2	34	28	2.2	2.2	.4	.02
JUL											
14...	0	9.6	.9	1.0	.3	34	28	2.7	2.0	.5	.00
28...	1	11	1.2	1.7	.3	38	31	1.5	2.9	.3	.01
AUG											
11...	8	11	1.1	1.8	.3	29	24	1.5	3.1	.2	.01
25...	0	13	1.5	1.5	.3	47	39	1.9	3.9	.3	.01
SEP											
15...	0	16	1.8	1.8	.3	59	48	1.5	5.7	.3	.01
22...	0	16	1.9	2.1	.4	60	49	1.9	4.3	.6	.01

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT											
22...	.00	.05	.11	.16	.01	.00	0	1	4	.0	0
29...	.00	.03	.05	.08	.00	.00	4	2	6	.1	4
NOV											
12...	.00	.02	.03	.05	.00	.00	0	3	6	.0	10
19...	.00	.02	.02	.04	.00	.00	0	0	3	.1	0
DEC											
10...	.00	.04	.14	.18	.01	.00	0	2	3	.0	0
17...	.00	.03	.00	.03	.00	.00	0	1	4	.0	0
JAN											
07...	.00	.02	.00	.02	.00	.00	0	0	3	.0	0
21...	.00	.01	.05	.06	.01	.00	0	13	15	.0	10
FEB											
04...	.01	.03	.07	.10	.00	.00	0	2	4	.0	0
25...	.00	.02	.10	.12	.00	.00	0	2	4	.0	0
MAR											
10...	.00	.02	.05	.07	.00	.00	10	1	3	.0	0
24...	.00	.02	.05	.07	.01	.00	0	0	3	.0	0
APR											
14...	.00	.04	.19	.23	.01	.01	0	0	3	.0	0
28...	.00	.06	.02	.08	.00	.00	0	1	0	.0	10
MAY											
12...	.00	.03	.07	.10	.03	.00	0	2	5	.0	0
26...	.00	.02	.10	.12	.00	.00	0	2	7	.0	0
JUN											
09...	.00	.03	.07	.10	.01	.00	0	5	7	.0	0
23...	.00	.03	.15	.18	.01	.00	0	1	2	.0	0
JUL											
14...	.00	.02	.09	.11	.01	.00	0	1	3	.0	0
28...	.00	.03	.03	.06	.00	.00	0	0	2	.0	0
AUG											
11...	.00	.01	.03	.04	.00	.00	0	0	3	.0	0
25...	.00	.06	.04	.10	.00	.00	0	1	5	.0	20
SEP											
15...	.00	.07	.01	.08	.00	.00	0	1	3	.0	10
22...	.00	.02	.01	.03	.00	.00	0	1	4	.0	0

12447390 ANDREWS CREEK NEAR MAZAMA, WA
(Hydrologic bench-mark station)

LOCATION.--Lat 48°49'23", long 120°08'41", in NE¼ sec.1, T.38 N., R.21 E., Okanogan County, Hydrologic Unit 17020008, Okanogan National Forest, on left bank 50 ft (15 m) upstream from Blizzard Creek, 3.5 mi (5.6 km) upstream from mouth, and 20 mi (32 km) northeast of Mazama.

DRAINAGE AREA.--22.1 mi^2 (57.2 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,300 ft (1,310 m), from topographic map.

REMARKS.--Records good. No regulation or diversion.

AVERAGE DISCHARGE.--8 years, 36.6 ft^3/s (1.037 m^3/s), 22.49 in/yr (571 mm/yr), 26,520 acre-ft/yr (32.7 hm^3/yr). The figure published in the 1975 report was in error; the correct figure is 7 years, 36.3 ft^3/s (1.028 m^3/yr), 22.31 in/yr (567 mm/yr), 26,300 acre-ft/yr (32.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft^3/s (31.7 m^3/s) June 10, 1972, gage height, 4.00 ft (1.219 m) from rating curve extended above 440 ft^3/s (12.5 m^3/s); minimum, 1.2 ft^3/s (0.034 m^3/s) Nov. 4, 1968, Nov. 20, 1970, Apr. 7, 1975; minimum gage height, 0.27 ft (0.082 m) Mar. 25-29, Apr. 6, 7, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft	Gage height (m)
May 10	2000	216	6.12	2.43	0.741
May 16	2100	219	6.20	2.44	0.744
June 9	2100	256	7.25	2.53	0.771
June 18	2100	*356	10.1	*2.84	0.866
June 29	2100	256	7.25	2.57	0.783

Minimum discharge 2.9 ft^3/s (0.082 m^3/s) Mar. 27, gage height, 0.39 ft (0.119 m).

REVISIONS.--Revised daily discharges, in cubic feet per second, for the water year 1975 are given below. These figures supersede those published in the report for 1975.

Day	July	Aug.	Sept.
1	47	16	16
2	50	15	15
3	54	15	13
4	58	14	12
5	64	14	11
6	82	13	11
7	78	12	10
8	74	12	10
9	66	12	9.4
10	60	11	9.1
11	54	11	8.8
12	50	11	8.5
13	45	10	8.2
14	40	10	7.9
15	35	9.4	7.4
16	33	9.4	7.4
17	37	10	7.2
18	30	12	7.2
19	27	16	7.2
20	25	13	7.2
21	24	11	6.9
22	23	9.7	6.6
23	22	14	6.4
24	20	18	6.1
25	20	16	6.1
26	19	13	5.9
27	18	12	5.9
28	18	14	5.6
29	18	15	5.6
30	18	15	5.4
31	17	15	---

Date	Total	Mean	Max	Min	Per square mile	Runoff Inches	Runoff Acre-feet
July 1975........................	1,226	39.5	82	17	1.79	2.06	2,430
August...........................	398.5	12.9	18	9.4	.58	.67	790
September........................	254.0	8.47	16	5.4	.38	.43	504
Water year 1975..................	9,461.7	25.9	308	1.4	1.17	15.93	18,770

12447390 ANDREWS CREEK NEAR MAZAMA, WA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	6.6	7.2	6.4	5.4	4.5	3.7	20	97	159	31	18
2	5.2	6.9	7.9	6.1	5.4	4.5	3.5	30	82	138	41	18
3	5.4	7.2	12	6.1	5.4	4.3	3.7	36	76	121	42	17
4	6.1	8.5	13	6.1	5.2	4.3	3.7	44	72	118	45	16
5	6.4	9.4	10	6.1	5.2	4.3	4.1	54	69	123	50	16
6	6.6	8.8	9.7	5.9	5.4	4.3	4.7	59	72	135	55	16
7	6.1	8.8	9.4	5.9	5.4	4.3	4.3	86	87	136	65	17
8	5.9	7.4	9.0	5.9	5.4	4.3	4.7	128	118	137	55	18
9	6.9	6.1	10	5.6	5.2	4.3	6.4	156	187	115	50	18
10	7.9	7.9	10	5.6	5.2	4.3	6.9	183	147	101	45	18
11	7.9	7.2	9.4	5.6	5.2	4.1	7.9	167	186	94	42	17
12	7.7	7.7	8.8	5.6	5.0	4.1	7.9	133	155	87	37	16
13	7.2	7.2	8.5	5.4	5.0	4.1	8.5	139	139	82	35	16
14	6.9	7.7	8.2	5.4	5.0	4.1	8.5	151	145	73	35	16
15	6.9	18	8.2	5.6	5.0	3.9	8.5	147	184	69	40	15
16	6.6	13	7.9	6.6	5.0	3.9	8.5	171	217	66	45	14
17	6.9	9.4	7.9	6.9	5.0	3.9	8.8	188	257	63	40	15
18	11	7.9	7.7	6.4	5.0	4.1	8.8	156	284	58	35	18
19	9.0	9.0	7.7	6.1	5.0	3.9	9.0	141	290	55	31	15
20	7.9	8.8	7.4	6.1	4.7	3.9	9.4	119	257	52	28	15
21	7.4	8.2	7.2	5.9	4.7	3.9	9.4	131	230	48	25	14
22	7.2	8.5	7.2	5.9	4.7	3.9	9.4	149	206	44	23	14
23	6.9	8.5	7.2	5.9	4.7	3.9	9.4	149	179	42	22	14
24	5.9	8.8	6.9	5.9	4.7	3.9	9.7	162	158	39	22	14
25	6.9	8.2	6.9	5.6	4.7	3.7	9.7	139	143	37	22	14
26	6.4	8.2	6.9	5.6	4.7	3.7	10	131	135	36	21	13
27	6.9	7.9	6.9	5.6	4.5	3.7	11	165	147	33	20	11
28	6.6	7.7	6.6	5.6	4.7	3.7	11	151	171	31	19	12
29	6.4	7.4	6.6	5.6	4.5	3.7	12	129	200	31	18	12
30	7.4	7.2	6.6	5.6	---	3.7	15	117	193	32	18	12
31	6.9	---	6.4	5.6	---	3.7	---	106	---	29	18	---
TOTAL	214.6	254.1	255.3	182.2	145.0	124.9	238.1	3857	4933	2384	1075	459
MEAN	6.92	8.47	8.24	5.88	5.00	4.03	7.94	124	164	76.9	34.7	15.3
MAX	11	18	13	6.9	5.4	4.5	15	188	290	159	65	18
MIN	5.2	6.1	6.4	5.4	4.5	3.7	3.5	20	69	29	18	11
CFSM	.31	.38	.37	.27	.23	.18	.36	5.61	7.42	3.48	1.57	.69
IN.	.36	.43	.43	.31	.24	.21	.40	6.49	8.30	4.01	1.81	.77
AC-FT	426	504	506	361	288	248	472	7650	9780	4730	2130	910

CAL YR 1975 TOTAL 4852.7 MEAN 27.0 MAX 308 MIN 1.4 CFSM 1.22 IN 16.58 AC-FT 19560
WTR YR 1976 TOTAL 14122.2 MEAN 38.6 MAX 290 MIN 3.5 CFSM 1.75 IN 23.77 AC-FT 28010

12447390 ANDREWS CREEK NEAR MAZAMA, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT 21...	1000	6.6	48	7.0	1.6	11.4	<1	<1	<1	20	0
NOV 11...	0940	6.8	53	7.4	.3	11.8	1	<1	1	20	0
DEC 18...	1115	7.8	65	7.3	.5	12.5	<1	<1	<1	25	0
JAN 15...	1030	8.9	58	7.5	.0	12.7	1	<1	4	23	0
FEB 11...	1045	5.1	46	7.3	.6	11.6	<1	<1	<1	22	0
MAR 09...	1230	3.5	58	7.3	1.2	11.8	<1	<1	<1	24	0
APR 06...	1500	4.7	48	7.1	1.2	11.2	1	<1	3	23	0
MAY 13...	0900	124	23	7.2	1.2	11.6	<1	<1	1	12	0
JUN 03...	0930	87	25	8.0	.8	12.6	4	1	3	13	0
JUL 08...	0945	139	30	8.6	8.2	10.6	<1	<1	<1	8	0
AUG 03...	0930	42	28	8.8	8.5	9.2	5	13	13	14	4
SEP 08...	1245	18	63	8.4	7.6	11.3	<1	4	37	16	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATF (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT 21...	6.2	1.0	1.5	.1	.5	28	0	23	4.5	1.7	1.8
NOV 11...	6.5	1.0	2.3	.2	.5	28	0	23	1.8	1.8	1.4
DEC 18...	8.2	1.1	2.3	.2	.6	32	0	26	2.6	1.9	2.4
JAN 15...	7.3	1.1	2.7	.2	.5	34	0	28	1.7	5.7	.6
FEB 11...	6.6	1.3	2.2	.2	.5	34	0	28	2.7	1.7	.3
MAR 09...	7.4	1.4	2.4	.2	.4	37	0	30	3.0	2.6	.3
APR 06...	7.2	1.2	2.3	.2	.6	33	0	27	4.2	.9	.4
MAY 13...	3.7	.7	1.4	.2	.4	20	0	16	2.0	2.0	.0
JUN 03...	4.1	.7	--	--	.4	19	0	16	.3	1.5	.2
JUL 08...	2.7	.4	.8	.1	.3	13	0	11	.1	1.1	.6
AUG 03...	4.6	.7	1.3	.2	.4	13	0	11	.0	4.4	.5
SEP 08...	5.1	.7	--	--	.4	27	0	22	.2	1.4	1.0

12447390 ANDREWS CREEK NEAR MAZAMA, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	CYANIDE (CN) (MG/L)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT 21...	.0	9.1	42	36	.06	.75	.01	.00	--	1	.02
NOV 11...	.1	9.6	43	37	.06	.80	.02	.00	--	2	.04
DEC 18...	.0	11	51	43	.07	1.07	.02	.00	--	5	.11
JAN 15...	.2	10	48	45	.07	1.15	.05	.00	--	1	.02
FEB 11...	.1	9.5	39	39	.05	.54	.03	.00	.00	1	.01
MAR 09...	.2	10	49	43	.07	.47	.03	.00	--	2	.02
APR 06...	.1	10	41	39	.06	.52	.03	.00	--	0	.00
MAY 13...	.0	7.8	23	26	.03	7.70	.01	.01	--	1	.33
JUN 03...	.0	8.5	29	--	.04	6.84	.01	.00	.00	1	.24
JUL 08...	.1	6.6	25	19	.03	9.38	.00	.00	--	0	.00
AUG 03...	.1	8.1	32	27	.04	3.63	.00	.01	--	1	.11
SEP 08...	.1	9.2	42	--	.06	2.04	.01	.00	--	1	.05

DATE	TOTAL BARIUM (BA) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)
FEB 11...	0	<10	0	<10	40	<100	10	.0	0	<10	60
JUN 03...	0	<10	0	<10	60	<100	0	.0	0	<10	0

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (U) (UG/L)
FEB 11...	1045	39	<1	<.4	<.4	1.5	<.4	1.2	<.4	.04	.20

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
JUN 03...	0930	.00	.00	.00

12448000 CHEWACK RIVER AT WINTHROP, WA

LOCATION.--Lat 48°28'38", long 120°11'08", in SW¼NW¼ sec.2, T.34 N., R.21 E., Okanogan County, Hydrologic Unit 17020008, at State Highway 20 bridge in Winthrop and 0.2 mi (0.3 km) upstream from mouth.

DRAINAGE AREA.--525 mi² (1,360 km²).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRATE (N) (MG/L)
OCT											
22...	0835	91	120	8.0	4.0	13	2	12.2	B140	<2	.08
29...	0820	110	130	8.0	5.1	13	1	11.9	B100	B4	.08
NOV											
12...	0835	107	120	7.8	1.9	8	2	13.4	B100	<2	.12
19...	0840	105	120	8.0	.0	8	3	14.1	>28	<2	.10
DEC											
10...	0850	153	120	7.4	.3	13	1	13.1	42	<2	.07
17...	0820	1270	140	7.7	.0	8	1	14.6	--	--	.08
FEB											
04...	0815	198	140	6.6	.0	8	2	13.8	40	B2	.13
25...	0835	89	130	8.1	1.2	4	1	13.2	B26	<2	.08
MAR											
10...	0840	88	108	7.4	2.4	4	2	12.9	>56	<2	.08
24...	0830	94	140	7.7	3.6	8	2	12.2	--	--	.09
APR											
14...	0830	318	130	7.7	4.5	21	9	12.0	100	2	.08
28...	0845	358	138	8.0	6.9	13	4	11.3	42	<2	.05
MAY											
12...	0830	2270	55	7.4	5.3	55	5	12.6	62	<2	.01
26...	0900	2580	51	7.5	6.4	38	5	11.8	50	<2	.01
JUN											
09...	0900	2590	47	7.4	8.8	42	6	11.6	560	B40	.00
23...	0825	2270	42	7.5	7.8	25	2	12.2	B50	<2	.01
JUL											
14...	0820	801	65	7.7	9.7	21	2	11.2	B130	B2	.00
28...	0820	330	92	7.7	11.6	8	1	10.3	120	B2	.01
AUG											
11...	0830	382	84	7.6	13.0	25	3	10.6	>150	<2	.01
25...	0805	314	95	7.7	13.3	17	1	9.7	260	B10	.01
SEP											
15...	0815	137	128	8.0	9.6	13	1	10.7	B140	<2	.01
22...	0805	118	122	7.9	10.6	13	1	10.5	B100	B2	.02

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT											
22...	.00	.03	.04	.07	.00	.00	0	5	6	.0	10
29...	.00	.02	.04	.06	.00	.00	2	2	6	.0	4
NOV											
12...	.00	.02	.05	.07	.00	.00	0	1	3	.0	0
19...	.00	.02	.03	.05	.01	.00	0	0	2	.0	0
DEC											
10...	.00	.03	.03	.06	.00	.00	0	11	9	.0	0
17...	.00	.03	.02	.05	.00	.00	0	1	3	.1	0
FEB											
04...	.00	.02	.07	.09	.00	.00	0	2	3	.0	10
25...	.00	.02	.10	.12	.01	.00	0	3	5	.0	0
MAR											
10...	.00	.01	.06	.07	.00	.00	0	1	6	.0	0
24...	.00	.02	.07	.09	.00	.00	0	0	4	.0	0
APR											
14...	.00	.03	.19	.22	.02	.00	0	0	3	.0	0
28...	.00	.04	.10	.14	.01	.00	0	1	0	.0	0
MAY											
12...	.00	.03	.19	.22	.05	.00	0	0	3	.0	0
26...	.00	.03	.13	.16	.02	.00	0	1	6	.0	0
JUN											
09...	.00	.03	.16	.19	.02	.00	0	3	7	.0	0
23...	.00	.04	.09	.13	.02	.00	0	1	2	.0	0
JUL											
14...	.00	.02	.08	.10	.02	.00	0	1	3	.0	0
28...	.00	.03	.09	.12	.00	.00	0	3	5	.0	0
AUG											
11...	.00	.03	.07	.10	.01	.00	0	2	4	.0	0
25...	.00	.04	.02	.06	.00	.00	0	0	6	.0	0
SEP											
15...	.00	.02	.06	.08	.01	.00	0	0	3	.0	0
22...	.00	.02	.08	.10	.00	.00	0	0	4	.0	0

12448998 TWISP RIVER NEAR TWISP, WA

LOCATION.--Lat 48°22'12", long 120°08'51", in SE¼SE¼ sec.12, T.33 N., R.21 E., Okanogan County, Hydrologic Unit 17020008, on left bank, 20 ft (6.1 m) downstream from county road bridge, 0.8 mi (1.3 km) west of the Twisp city limits and at mile 1.6 (2.6 km).

DRAINAGE AREA.--245 mi^2 (635 km^2).

PERIOD OF RECORD.--May 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,640 ft (500 m) from topographic map.

REMARKS.--Records good except during winter months, which are fair. No known regulation. Several diversions above station for irrigation. On Sept. 2, 1971, water diverted above station from Twisp River was measured at 61.5 ft^3/s (1.74 m^3/s) of which 32.9 ft^3/s (0.93 m^3/s) was carried by Twisp-Methow Valley Irrigation District Canal which diverts from right bank about 3.2 mi (5.1 km) west of Twisp city limits; most of the diverted water in this canal is used to irrigate land below the station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,980 ft^3/s (84.4 m^3/s) June 2, 3, 1975, from rating curve extended above 1,500 ft^3/s (42.5 m^3/s), gage height, 11.37 ft (3.466 m); minimum daily, 54 ft^3/s (1.53 m^3/s), Sept. 16-18, 1975.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 29, 1948 had a discharge of 9,440 ft^3/s (267 m^3/s), by slope-area measurement made about 1,000 ft (300 m) upstream from mouth.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,980 ft^3/s (56.1 m^3/s) June 19, gage height, 10.75 ft (3.277 m) from rating curve extension as mentioned above; minimum daily, 62 ft^3/s (1.76 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	86	90	180	140	105	135	376	694	1080	409	154
2	65	86	120	170	135	98	139	540	622	893	404	149
3	65	93	150	160	150	90	138	683	573	865	404	147
4	65	105	220	160	150	86	144	743	540	858	445	138
5	65	117	660	160	145	84	156	830	515	998	418	131
6	70	124	580	155	130	85	194	816	510	1180	384	131
7	71	126	520	150	135	90	206	928	578	1400	584	122
8	71	126	460	155	140	92	217	1240	732	1350	551	116
9	71	126	420	155	140	97	238	1530	1040	1250	440	110
10	73	124	390	150	145	97	274	1640	1280	991	388	104
11	74	122	370	150	145	97	316	1540	1220	865	352	100
12	74	119	340	145	145	97	348	1260	1030	851	328	97
13	74	115	320	140	145	98	360	1180	865	823	308	88
14	74	113	300	140	145	98	360	1290	795	743	288	85
15	74	124	280	150	140	100	352	1230	907	716	284	85
16	76	140	270	150	135	100	336	1240	1180	781	296	81
17	74	128	260	160	135	100	320	1350	1480	900	265	80
18	83	111	245	150	135	106	308	1180	1690	879	250	77
19	88	107	235	145	135	110	300	1050	1910	767	238	77
20	93	107	230	145	135	110	308	900	1730	754	229	77
21	95	107	230	145	135	110	304	837	1450	710	226	77
22	93	107	225	150	135	110	304	872	1250	556	209	77
23	92	107	220	150	130	114	296	1000	1100	505	195	75
24	90	110	215	145	130	118	296	1030	1020	584	189	74
25	86	110	210	145	125	122	288	977	921	606	214	74
26	86	120	200	155	120	122	280	886	795	535	209	72
27	86	120	200	155	115	122	277	1060	781	476	187	71
28	88	118	195	150	110	124	277	1190	907	418	176	69
29	86	115	190	150	110	124	274	1040	1230	409	171	68
30	86	92	185	155	---	127	308	900	1370	440	164	67
31	86	---	185	150	---	133	---	774	---	413	156	---
TOTAL	2436	3405	8715	4720	3915	3266	8042	32112	30705	24596	9361	2873
MEAN	78.6	114	281	152	135	105	268	1036	1024	793	302	95.8
MAX	95	140	660	180	150	133	360	1640	1910	1400	584	154
MIN	62	86	90	140	110	84	135	376	510	409	156	67
AC-FT	4830	6750	17290	9360	7770	6480	15950	63690	60900	48790	18570	5700

WTR YR 1976 TOTAL 134146 MEAN 367 MAX 1910 MIN 62 AC-FT 266100

NOTE.--No gage-height record Jan. 4 to Feb. 9.

12449510 METHOW RIVER NEAR TWISP, WA

LOCATION.--Lat 48°20'53", long 120°06'21", in SE¼NE¼ sec.21, T.33 N., R.22 E., Okanogan County, Hydrologic Unit 17020008. 1.3 mi (2.1 km) southeast of Twisp city limits, 2.2 mi (3.5 km) upstream from Beaver Creek and 3.0 mi (4.8 km) downstream from Twisp River.

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
22...	0805	402	150	7.0	5.7	8	2
29...	0750	384	150	7.8	6.6	17	3
NOV							
12...	0810	545	140	7.7	3.7	8	4
19...	0805	488	150	8.0	.5	4	1
DEC							
10...	0805	1430	120	7.8	1.9	13	2
17...	0745	929	140	8.0	.3	13	1
JAN							
07...	0800	1770	150	7.2	.1	8	2
21...	0750	478	140	8.0	.0	4	2
FEB							
04...	0740	516	140	6.9	.0	4	2
25...	0810	431	160	7.7	1.6	4	2
MAR							
10...	0800	384	119	7.5	3.6	4	2
24...	0750	450	160	7.7	4.6	4	3
APR							
14...	0750	1790	145	8.0	4.4	17	8
28...	0815	1460	148	8.1	7.1	25	6
MAY							
12...	0800	--	78	7.5	6.0	38	10
26...	0820	5180	78	7.4	6.9	21	7
JUN							
09...	0820	5380	70	7.6	9.2	21	9
23...	0745	5900	68	7.6	7.0	8	4
JUL							
14...	0745	3640	79	7.8	9.0	13	2
28...	0750	2090	90	7.7	10.1	4	1
AUG							
11...	0755	1830	96	7.7	11.8	13	3
25...	0720	1140	112	7.7	12.1	8	1
SEP							
15...	0740	488	140	8.0	9.7	13	1
22...	0730	440	142	8.0	11.0	4	1

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
22...	11.5	B380	B2	.20	.03	.01	.00
29...	11.2	B150	B14	.24	.02	.01	.00
NOV							
12...	12.4	B100	<2	.21	.06	.01	.00
19...	13.4	B180	72	.19	.03	.01	.00
DEC							
10...	12.5	56	B2	.21	.06	.01	.00
17...	13.8	48	B6	.11	.02	.00	.00
JAN							
07...	13.4	46	B2	.16	.04	.01	.00
21...	13.1	42	B6	.16	.02	.00	.00
FEB							
04...	13.6	B30	<2	.79	.01	.00	.00
25...	12.7	B10	B4	.13	.06	.01	.00
MAR							
10...	12.4	B10	<2	.14	.02	.01	.00
24...	11.7	--	--	.14	.02	.01	.00
APR							
14...	12.1	B20	<2	.10	.03	.01	.00
28...	11.3	60	<2	.18	.04	.00	.00
MAY							
12...	12.2	70	<2	.04	.03	.06	.00
26...	11.6	40	4	.03	.09	.01	.00
JUN							
09...	11.5	440	B30	.03	.03	.04	.00
23...	11.8	100	B6	.03	.04	.01	.00
JUL							
14...	11.4	110	B4	.01	.04	.01	.00
28...	10.5	B100	B12	.08	.09	.02	.01
AUG							
11...	10.6	B220	<2	.09	.11	.01	.00
25...	9.6	B150	B32	.06	.02	.01	.00
SEP							
15...	10.4	>120	B8	.13	.02	.00	.00
22...	10.1	B150	B8	.13	.04	.01	.00

B Results based upon colony counts outside the ideal range.

12449600 BEAVER CREEK BELOW SOUTH FORK, NEAR TWISP, WA

LOCATION.--Lat 48°26'00", long 120°01'26", in SE¼NW¼ sec.24, T.34 N., R.22 E., Okanogan County, Hydrologic Unit 17020008, on right bank 1,000 ft (305 m) downstream from South Fork Beaver Creek, 6.5 mi (10.5 km) northeast of Twisp, and at mile 8.9 (14.3 km).

DRAINAGE AREA.--62.0 mi^2 (160.6 km^2).

PERIOD OF RECORD.-- April 1960 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (853 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--16 years, 20.8 ft^3/s (0.589 m^3/s), 4.56 in/yr (116 mm/yr), 15,070 acre-ft/yr (18.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft^3/s (15.2 m^3/s) May 29, 1972, gage height, 7.05 ft (2.149 m); minimum, 0.75 ft^3/s (0.021 m^3/s) Nov. 13, 16, 1968; minimum gage height, 3.94 ft (1.201 m) Nov. 19, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 80 ft^3/s (2.27 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 2	1245	95	2.69	5.03	1.533	May 10	2000	*136	3.85	*5.28	1.609

Minimum discharge, 2.7 ft^3/s (0.076 m^3/s) Nov. 8, gage height, 3.93 ft (1.198 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	11	82	9.3	8.8	8.1	12	25	59	31	11	9.9
2	7.4	11	89	9.2	8.8	8.1	12	35	57	33	13	9.9
3	7.4	11	45	9.2	8.8	8.1	12	49	54	30	13	9.5
4	7.4	13	22	9.2	8.8	8.1	12	48	53	30	13	9.5
5	7.4	13	19	9.2	8.8	8.1	13	46	53	28	16	9.2
6	7.7	12	19	9.2	8.8	8.1	12	48	52	26	16	9.5
7	7.7	11	19	9.2	8.8	8.1	12	60	52	25	23	9.2
8	7.7	8.4	19	9.2	8.8	8.1	14	79	54	24	18	9.2
9	8.8	14	13	9.2	8.8	8.1	18	95	59	23	15	9.2
10	14	13	9.5	9.2	8.8	8.1	19	108	54	22	14	8.8
11	12	16	9.5	9.2	8.8	8.1	19	106	53	21	13	8.8
12	9.9	12	9.4	9.2	8.8	8.1	18	95	51	20	13	8.4
13	9.2	11	9.4	9.2	8.8	8.1	16	99	48	19	12	8.4
14	8.8	11	9.4	9.2	8.8	8.6	14	97	47	18	17	8.4
15	8.8	19	9.8	9.2	8.8	8.6	13	91	49	19	16	8.4
16	8.4	14	9.8	9.2	8.8	8.6	12	97	49	18	17	8.0
17	8.8	15	9.8	9.2	8.8	8.6	12	97	48	17	16	8.0
18	8.8	18	9.8	9.2	8.8	8.7	13	86	46	16	14	7.7
19	8.8	48	9.8	9.2	8.8	9.4	13	86	45	15	14	7.7
20	8.8	53	9.8	9.2	8.8	9.4	15	83	43	15	12	7.3
21	9.9	42	9.8	9.1	8.7	9.4	13	79	43	15	12	7.3
22	9.9	43	9.8	8.8	8.1	10	13	79	45	15	11	7.3
23	9.5	21	9.8	8.8	8.1	10	12	79	41	14	11	7.7
24	8.4	13	9.8	8.8	8.1	10	13	83	39	14	12	9.9
25	11	10	9.8	8.8	8.1	10	13	75	38	13	24	8.4
26	9.5	9.2	9.8	8.8	8.1	11	13	72	36	12	18	7.7
27	9.9	8.9	9.8	8.8	8.1	11	14	83	35	12	14	7.3
28	11	13	9.8	8.8	8.1	11	15	73	34	12	14	7.3
29	11	28	9.8	8.8	8.1	12	16	67	32	12	12	7.3
30	11	75	9.8	8.8	---	12	20	65	31	12	11	7.0
31	11	---	9.7	8.8	---	12	---	62	---	11	10	---
TOTAL	287.3	597.5	540.7	281.2	249.5	285.6	423	2347	1400	592	445	252.2
MEAN	9.27	19.9	17.4	9.07	8.60	9.21	14.1	75.7	46.7	19.1	14.4	8.41
MAX	14	75	89	9.3	8.8	12	20	108	59	33	24	9.9
MIN	7.4	8.4	9.4	8.8	8.1	8.1	12	25	31	11	10	7.0
CFSM	.15	.32	.28	.15	.14	.15	.23	1.22	.75	.31	.23	.14
IN.	.17	.36	.32	.17	.15	.17	.25	1.41	.84	.36	.27	.15
AC-FT	570	1190	1070	558	495	566	839	4660	2780	1170	883	500

CAL YR 1975 TOTAL 8283.8 MEAN 22.7 MAX 155 MIN 6.0 CFSM .37 IN 4.97 AC-FT 16430
WTR YR 1976 TOTAL 7701.0 MEAN 21.0 MAX 108 MIN 7.0 CFSM .34 IN 4.62 AC-FT 15270

12449950 METHOW RIVER NEAR PATEROS, WA

LOCATION.--Lat 48°04'39", long 119°59'02", in SE¼SW¼ sec.20, T.30 N., R.23 E., Okanogan County, Hydrologic Unit 17020008, on right bank 1.4 mi (2.3 km) downstream from Black Canyon Creek, 4.3 mi (6.9 km) northwest of Pateros, and at mile 6.7 (10.8 km).

DRAINAGE AREA.--1,772 mi^2 (4,589 km^2).

PERIOD OF RECORD.--April 1959 to current year. Water temperatures October 1968 to October 1970.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 900 ft (274 m) from topographic map. Prior to Dec. 17, 1964, nonrecording gage at same site and datum.

REMARKS.--Records good. Diversions for irrigation of about 11,000 acres (45 km^2) above station (1959 Bureau of Reclamation land classification).

AVERAGE DISCHARGE.--17 years, 1,679 ft^3/s (47.55 m^3/s), 1,216,000 acre-ft/yr (1,500 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft^3/s (816 m^3/s) May 31, 1972, gage height, 12.25 ft (3.734 m); minimum daily 150 ft^3/s (4.25 m^3/s) Jan. 8, 9, 10, 1974, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1920, 46,700 ft^3/s (1,320 m^3/s) May 29, 1948, by slope-area measurement of peak flow at site 1 mi (1.6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,250 ft^3/s (262 m^3/s) June 19, gage height, 7.10 ft (2.164 m); minimum daily, 400 ft^3/s (11.3 m^3/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	562	620	748	590	540	675	2110	4690	6000	2170	1090
2	475	545	917	714	657	547	675	2860	4280	5330	2180	1040
3	480	574	1250	748	69[illegible]	538	675	3830	3950	4890	2240	1010
4	475	589	2830	743	676	544	688	4270	3710	4750	2320	970
5	465	655	2500	713	686	555	721	4750	3520	4910	2250	931
6	480	724	2200	689	692	560	790	4830	3450	5310	2360	916
7	450	789	2000	713	699	560	916	5200	3680	6000	2780	893
8	405	799	1800	713	690	560	1010	6590	4280	6110	2970	863
9	400	782	1670	691	664	565	1130	8110	5550	5960	2530	826
10	480	769	1580	699	652	565	1370	8760	6870	5100	2250	790
11	460	752	1500	690	662	573	1610	8710	6940	4540	2060	754
12	450	732	1400	670	663	561	1800	7590	6250	4320	1980	734
13	440	722	1320	633	660	555	1880	7030	5590	4190	1890	701
14	430	721	1260	667	638	555	1890	7420	5180	3900	1870	681
15	460	787	1200	677	621	555	1860	7180	5460	3730	1950	662
16	522	842	1180	724	610	561	1770	7250	6270	3750	1980	643
17	533	840	1160	709	604	578	1710	7910	7200	4020	1930	631
18	528	770	1100	688	601	596	1650	7220	8090	4040	1790	619
19	544	692	1050	650	598	631	1610	6700	8840	3750	1710	619
20	566	693	1030	666	594	613	1650	6050	8730	3630	1640	613
21	599	685	1040	679	594	613	1660	5740	7740	3550	1560	607
22	588	683	993	673	606	613	1650	5700	7130	3110	1470	596
23	572	697	970	665	587	607	1610	6250	6430	2750	1380	590
24	556	706	947	657	562	625	1590	6470	5870	2810	1350	590
25	558	762	927	692	545	643	1570	6110	5390	2900	1410	584
26	571	777	929	701	558	637	1540	5700	4870	2720	1440	573
27	563	761	921	686	529	637	1550	5980	4650	2530	1340	561
28	565	721	873	682	513	637	1610	6840	4850	2320	1300	550
29	580	600	850	696	534	637	1650	6250	5700	2190	1250	539
30	587	563	841	687	---	637	1780	5720	6590	2270	1190	523
31	573	---	816	618	---	662	---	5160	---	2210	1130	---
TOTAL	15775	21334	39674	21381	17985	18260	42290	190290	171750	123590	57670	21699
MEAN	509	711	1280	690	620	589	1410	6138	5725	3987	1860	723
MAX	599	882	2930	748	699	662	1890	8760	8840	6110	2970	1090
MIN	400	545	620	618	513	538	675	2110	3450	2190	1130	523
AC-FT	31290	42320	78690	42410	35670	36220	83880	377400	340700	245100	114400	43040

CAL YR 1975 TOTAL 608152 MEAN 1666 MAX 11900 MIN 260 AC-FT 1206000
WTR YR 1976 TOTAL 741698 MEAN 2026 MAX 8840 MIN 400 AC-FT 1471000

12449954 METHOW RIVER AT 2ND BRIDGE NEAR PATEROS, WA

LOCATION.--Lat 48°04'29", long 119°57'20", in NW¼NE¼ sec.28, T.30 N., R.23 E., Okanogan County, Hydrologic Unit 17020008, at bridge on State Highway 153, 1.7 mi (2.7 km) downstream from gaging station, 3.1 mi (5.0 km) downstream from Black Canyon Creek, 3.0 mi (4.8 km) west of Pateros, and at mile 5.0 (8.0 km).

DRAINAGE AREA.--1,777 mi^2 (4,602 km^2).

PERIOD OF RECORD.--Water years 1959-1962, 1963-1970 (partial- record station), 1972, 1975 to September 1976 (discontinued). Records prior to October 1974 published as 12449950 "Methow River near Pateros" at an erroneous location, but were actually obtained at the present site.

COOPERATION.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

REMARKS.--Water temperature records collected October 1968 to October 1970, at gaging station 1.7 mi (2.7 km) upstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
21...	1230	599	180	7.7	8.1	8	4
28...	1220	566	180	7.9	7.7	17	4
NOV							
11...	1135	754	150	8.0	2.9	13	2
18...	1205	775	150	8.1	2.5	4	1
DEC							
09...	1130	1670	130	7.3	7.1	13	3
16...	1210	1180	130	7.4	.1	4	2
JAN							
06...	1150	662	170	7.3	.3	8	6
20...	1135	654	160	7.8	.3	4	3
FEB							
03...	1025	701	160	7.1	1.2	4	4
24...	1145	560	510	7.9	4.5	9	3
MAR							
09...	1135	565	170	7.6	5.7	0	4
23...	1150	604	190	8.0	7.3	4	7
APR							
13...	1205	1880	155	7.8	9.2	17	8
27...	1140	1570	159	7.8	10.8	4	3
MAY							
11...	1200	8910	75	7.3	8.5	50	25
25...	1155	6160	79	7.4	9.3	25	10
JUN							
08...	1200	4370	90	7.3	13.9	17	8
22...	1150	7270	67	7.4	11.4	13	10
JUL							
13...	1125	4270	79	7.7	13.3	13	17
27...	1130	2550	100	7.7	14.9	8	3
AUG							
10...	1150	2270	108	7.8	16.3	17	1
24...	1140	1330	131	7.9	16.4	8	2
SEP							
14...	1130	675	165	8.1	13.8	8	1
21...	1140	604	170	8.2	15.2	0	1

12449954 METHOW RIVER AT 2ND BRIDGE NEAR PATEROS, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	FECAL COLI-FORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)
OCT							
21...	11.8	B260	B4	.24	.06	.01	.00
28...	11.8	B60	<2	.26	.04	.01	.00
NOV							
11...	13.8	B50	B2	.21	.02	.00	.00
18...	14.2	>22	<2	.21	.02	.00	.00
DEC							
09...	13.1	B80	B8	.14	.05	.00	.00
16...	14.9	B20	B4	.15	.06	.01	.00
JAN							
06...	14.3	B6	<2	.33	.06	.01	.00
20...	14.9	B10	<2	.22	.06	.00	.00
FEB							
03...	14.1	B24	<2	.19	.05	.01	.00
24...	13.1	B12	<2	.20	.04	.01	.00
MAR							
09...	13.0	B6	<2	.19	.02	.00	.00
23...	12.8	B6	<2	.11	.04	.01	.00
APR							
13...	11.8	>70	6	.07	.02	.02	.00
27...	11.1	15	<2	.07	.03	.01	.00
MAY							
11...	12.0	300	<20	.05	.11	.17	.00
25...	11.7	B30	B2	.03	.04	.03	.00
JUN							
08...	10.6	B90	B34	.03	.03	.02	.00
22...	11.5	B83	B10	.03	.05	.04	.00
JUL							
13...	10.7	B12	<2	.04	.04	.02	.00
27...	10.3	B12	<2	.08	.10	.01	.00
AUG							
10...	10.0	>160	B6	.08	.07	.01	.00
24...	9.7	B57	B4	.08	.01	.01	.00
SEP							
14...	10.3	B36	<2	.17	.02	.00	.00
21...	10.0	B30	<2	.17	.02	.00	.00

B Results based upon colony counts outside the ideal range.

12450700 COLUMBIA RIVER BELOW WELLS DAM, WA

LOCATION.--Lat 47°56'48", long 119°51'56", in SW¼SE¼ sec.6, T.28 N., R.24 E., Chelan County, Hydrologic Unit 17020005, at powerhouse of Wells Dam, 0.7 mi (1.1 km) northeast of Azwell, and at mile 515.9 (830.1 km).

DRAINAGE AREA.--86,100 mi^2 (223,000 km^2), approximately.

PERIOD OF RECORD.--October 1967 to current year. October 1953 to September 1967 (monthly discharge only) on file in district office.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bechtel Corporation). Prior to Oct. 1, 1970, at site 0.8 mi (1.3 km) downstream at same datum. Auxiliary water-stage recorder 6.8 mi (10.9 km) downstream from base gage at same datum.

REMARKS.--Records good. Flow regulated by nine major reservoirs and numerous smaller reservoirs and powerplants. Diversion by Feeder Canal for Columbia Basin project (see sta 12435500) and for irrigation of about 380,000 acres (1,540 km^2) in the United States and an additional 35,000 acres (142 km^2) in Canada.

AVERAGE DISCHARGE.--23 years, 122,200 ft^3/s (3,461 m^3/s), 88,530,000 acre-ft/yr (109,000 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 402,000 ft^3/s (11,400 m^3/s) June 15, 1972; maximum elevation, 731.92 ft (223.089 m) June 16, 1972; minimum discharge, 17,900 ft^3/s (507 m^3/s) Oct. 5, 1970, elevation, 703.88 ft (214.543 m), from powerplant records.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 287,000 ft^3/s (8,130 m^3/s) Aug. 24; maximum elevation, 721.48 ft (219.907 m) Aug. 24; minimum daily discharge, 37,000 ft^3/s (1,050 m^3/s) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73400	84200	89800	111000	107000	151000	152000	135000	185000	158000	172000	145000
2	63600	66800	72500	107000	132000	165000	139000	121000	181000	154000	184000	150000
3	64400	82100	60100	90900	130000	168000	98800	142000	174000	156000	204000	159000
4	39700	69100	79000	116000	138000	155000	92700	151000	164000	156000	208000	157000
5	47900	83300	72600	122000	155000	165000	114000	164000	158000	152000	209000	148000
6	74900	95100	67900	111000	154000	165000	126000	145000	152000	154000	199000	146000
7	70900	91800	87200	107000	146000	151000	104000	169000	160000	155000	199000	222000
8	75200	88300	114000	108000	140000	157000	113000	196000	139000	154000	169000	194000
9	65000	66800	85800	109000	148000	163000	86700	221000	153000	152000	183000	182000
10	62100	93300	103000	113000	166000	153000	37000	225000	163000	152000	193000	153000
11	54800	83200	114000	106000	166000	150000	98700	210000	162000	149000	199000	132000
12	37200	85900	118000	119000	164000	144000	143000	190000	148000	153000	178000	125000
13	71200	91900	85000	109000	139000	136000	148000	189000	145000	173000	173000	131000
14	85600	74000	81000	97500	122000	151000	173000	187000	147000	185000	142000	118000
15	81400	91100	108000	109000	94800	133000	176000	187000	147000	194000	147000	117000
16	74400	88200	111000	127000	136000	125000	181000	189000	149000	211000	170000	108000
17	66300	108000	130000	96100	142000	137000	185000	190000	150000	220000	198000	109000
18	54800	110000	117000	97400	163000	150000	169000	198000	154000	234000	226000	97400
19	57100	119000	106000	108000	154000	139000	159000	192000	150000	238000	217000	61000
20	85200	113000	108000	127000	145000	126000	154000	186000	157000	224000	199000	90700
21	95900	114000	106000	136000	126000	119000	148000	189000	178000	218000	180000	106000
22	105000	104000	116000	145000	137000	141000	142000	192000	190000	199000	180000	111000
23	93400	79200	119000	121000	159000	145000	142000	195000	189000	185000	153000	106000
24	90800	115000	84200	121000	165000	151000	138000	195000	186000	139000	159000	104000
25	84600	100000	66600	123000	160000	135000	132000	195000	182000	133000	145000	74500
26	67700	111000	96200	131000	160000	151000	146000	196000	161000	153000	168000	62800
27	102000	79200	76700	117000	169000	114000	142000	193000	155000	199000	223000	98500
28	86100	101000	76600	127000	164000	115000	139000	189000	162000	213000	218000	98400
29	88200	103000	118000	144000	146000	133000	142000	197000	162000	213000	172000	103000
30	94600	97700	113000	128000	---	126000	143000	194000	165000	185000	193000	103000
31	99700	---	107000	128000	---	142000	---	181000	---	168000	154000	---
TOTAL	2313100	2789200	2989200	3611900	4227800	4456000	4063900	5703000	4868000	5529000	5714000	3712300
MEAN	74620	92970	96430	116500	145800	143700	135500	184000	162300	178400	184300	123700
MAX	105000	119000	130000	145000	169000	168000	185000	225000	190000	238000	226000	222000
MIN	37200	66800	60100	90900	94800	114000	37000	121000	139000	133000	142000	61000
AC-FT	4588000	5532000	5929000	7164000	8386000	8838000	8061000	11310000	9656000	10970000	11330000	7363000

CAL YR 1975 TOTAL 42321900 MEAN 116000 MAX 225000 MIN 37200 AC-FT 83950000
WTR YR 1976 TOTAL 49977400 MEAN 136600 MAX 238000 MIN 37000 AC-FT 99130000

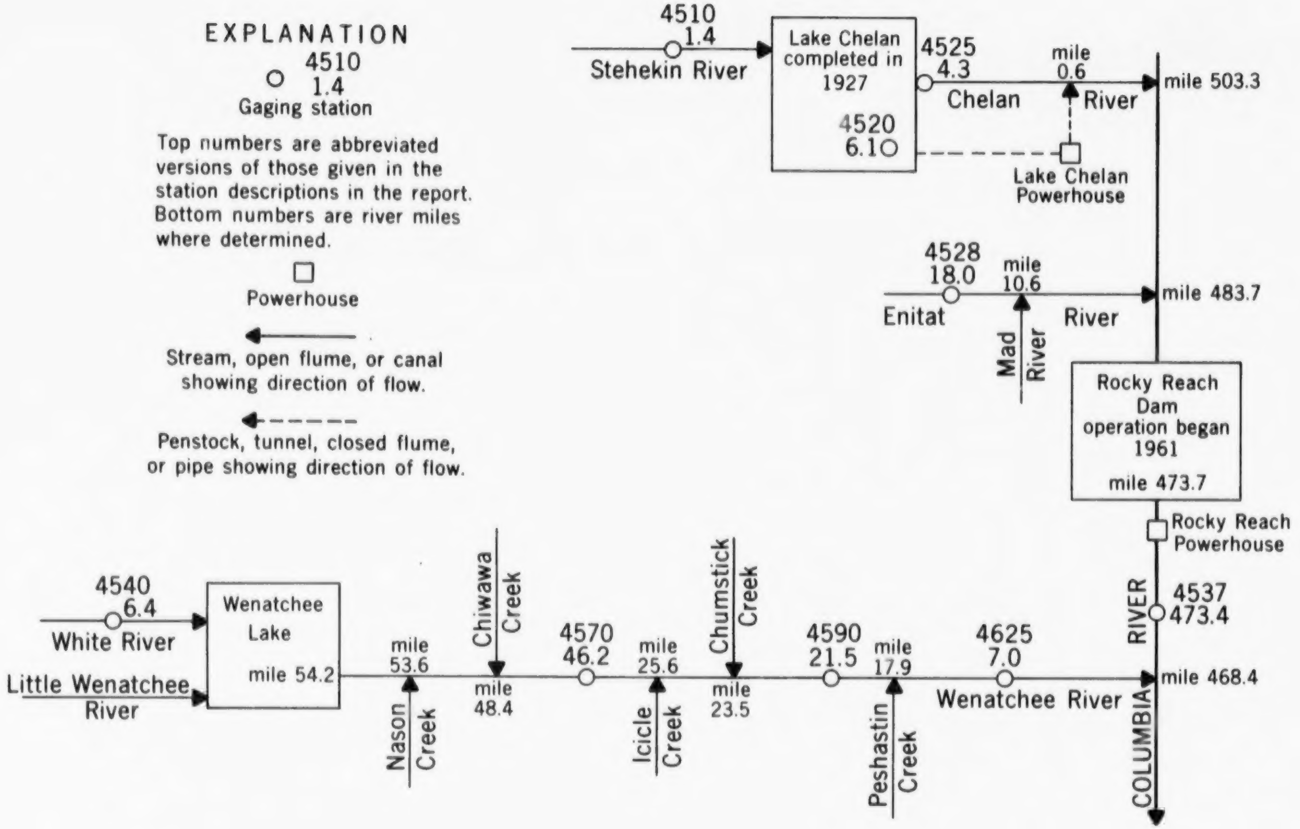
EXPLANATION
4510
1.4
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
4510
1.4
Stehekin River
Lake Chelan completed in 1927
4520
6.1
4525
4.3
Chelan
mile 0.6
River
Lake Chelan Powerhouse
mile 503.3
4528
18.0
Enitat
mile 10.6
Mad River
River
mile 483.7
Rocky Reach Dam operation began 1961
mile 473.7
Rocky Reach Powerhouse
4537
473.4
RIVER
COLUMBIA
mile 468.4
4540
6.4
White River
Little Wenatchee River
Wenatchee Lake
mile 54.2
mile 53.6
Nason Creek
Chiwawa Creek
mile 48.4
4570
46.2
mile 25.6
Icicle Creek
Chumstick Creek
mile 23.5
4590
21.5
mile 17.9
Peshastin Creek
4625
7.0
Wenatchee River

Figure 11. Gaging stations in Columbia River basin from Chelan to Wenatchee Rivers.

12451000 STEHEKIN RIVER AT STEHEKIN, WA

LOCATION.--Lat 48°19'47", long 120°41'26", in NE¼SE¼ sec.26, T.33 N., R.17 E., Chelan County, Hydrologic Unit 17020009, Lake Chelan National Recreation Area, on left bank 1,100 ft (335 m) upstream from Boulder Creek, 1.4 mi (2.3 km) upstream from Lake Chelan, and 2.1 mi (3.4 km) northwest of Stehekin. Records include flow of Boulder Creek.

DRAINAGE AREA.--344 mi² (891 km²), includes that of Boulder Creek.

PERIOD OF RECORD.--October 1910 to October 1915, October 1926 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 412: 1914. WSP 1316: 1911(M), 1914-15(M). WSP 1446: 1912(M). WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,098.5 ft (334.82 m) above mean sea level (unadjusted). Prior to Aug. 17, 1911, nonrecording gage 0.4 mi (0.6 km) upstream from mouth at Lake Chelan at different datums (datum change made June 13, 1911). Aug. 17, 1911, to Oct. 31, 1915, nonrecording gage 0.2 mi (0.3 km) downstream from Boulder Creek at different datum.

REMARKS.--Records good. No known regulation or diversion.

AVERAGE DISCHARGE.--55 years, 1,436 ft³/s (40.67 m³/s) 56.69 in/yr (1,440 mm/yr) 1,040,000 acre-ft/yr (1,280 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s (535 m³/s) May 29, 1948, gage height, 29.00 ft (8.839 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of slope-area measurement of peak flow; minimum, 56 ft³/s (1.59 m³/s) Jan. 21, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,500 ft³/s (184 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 4	0445	*9,310	264	*25.17	7.672	July 7	0215	6,800	193	23.98	7.309
June 19	2230	7,020	199	24.10	7.346						

Minimum discharge, 343 ft³/s (9.94 m³/s) Mar. 8, 9; minimum gage height, 18.32 ft (5.584 m), Oct. 14, Mar. 4, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	495	588	1210	588	766	397	384	2010	2450	4020	3640	2030
2	514	823	4080	577	747	389	384	2880	2200	3550	3490	1880
3	633	1310	7450	571	735	371	384	3180	2020	3570	3800	1570
4	645	2240	7050	565	710	375	388	3450	1960	3830	3540	1520
5	639	2150	4020	550	668	367	416	3510	1930	4540	3440	1790
6	627	1820	2960	524	656	359	515	3260	2240	5470	3120	1690
7	524	1500	2390	514	651	359	560	3760	2760	6260	4400	1270
8	475	1290	2240	505	633	351	604	5110	3700	6470	3600	1050
9	456	1130	2830	490	610	351	770	5890	4800	5300	3000	923
10	461	1020	2670	490	582	351	919	6170	5080	4240	3000	966
11	442	938	2230	480	582	359	1070	5470	4380	3940	3100	873
12	424	871	1910	475	645	363	1150	4340	3650	4130	3000	847
13	415	823	1670	447	605	359	1120	4250	3110	3810	2600	794
14	415	923	1470	447	582	359	1100	4500	2950	3640	2300	814
15	514	1360	1340	529	565	355	1060	4200	3610	3920	2100	837
16	500	1190	1220	885	588	355	972	4370	5200	4750	2150	916
17	1530	1050	1120	1020	571	351	926	4700	5600	5350	1900	1020
18	1560	938	1030	930	560	363	891	3940	6130	5030	2000	1080
19	1220	878	961	843	545	384	863	3490	6720	4650	1800	1130
20	1110	836	908	791	519	384	898	3180	6070	4820	2000	1190
21	930	797	856	753	500	380	891	3170	5120	4210	1800	1160
22	804	772	817	728	485	380	891	3500	4550	3250	1750	1130
23	710	766	778	698	475	384	877	4080	4020	3550	1800	1140
24	645	1570	753	674	475	411	870	3880	3640	4470	2000	1100
25	651	1460	728	651	461	416	863	3560	3230	4230	2250	1050
26	622	1270	735	627	442	411	863	3280	2890	3970	1890	1010
27	588	1110	704	930	442	406	919	4400	2970	3520	1550	969
28	565	1000	662	849	433	393	1060	4490	3600	3150	1780	962
29	605	845	686	804	411	384	1200	3660	5110	3780	1790	975
30	633	893	674	791	---	380	1410	3140	5170	3820	1680	941
31	593	---	627	772	---	384	---	2760	---	3760	1800	---
TOTAL	20945	34201	58779	20498	16644	11631	25218	121580	116860	133000	78070	34527
MEAN	676	1140	1896	661	574	375	841	3922	3895	4290	2518	1151
MAX	1560	2240	7450	1020	766	416	1410	6170	6720	6470	4400	2030
MIN	415	588	627	447	411	351	384	2010	1930	3150	1550	794
AC-FT	41540	67840	116600	40660	33010	23070	50020	241200	231800	263800	154900	68480

CAL YR 1975 TOTAL 605733 MEAN 1660 MAX 9480 MIN 220 AC-FT 1201000
WTR YR 1976 TOTAL 671953 MEAN 1836 MAX 7450 MIN 351 AC-FT 1333000

12452000 LAKE CHELAN AT CHELAN, WA

LOCATION.--Lat 47°50'11", long 120°03'37", near center o[illegible]c.15, T.27 N., R.22 E., Chelan County, Hydrologic Unit 17020009, on south shore of Lake Chelan at Lakeside, 2.1 mi (3.4 km) west of Chelan.

DRAINAGE AREA.--924 mi² (2,393 km²).

PERIOD OF RECORD.--September 1897 to December 1899, January to June 1905 and December 1910 to September 1911 (fragmentary gage heights only); October 1911 to current year. Records of change in contents prior to October 1911, published in WSP 482 and 492 in conjunction with records for Chelan River near Chelan, have been found to be unreliable and should not be used. Month-end contents October 1911 to September 1950 published in WSP 1316, chemical analyses June 1971 to August 1972.

REVISED RECORDS.--WSP 1246: 1951. WSP 1286: 1952. WSP 1933: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912. Prior to Jan. 1, 1900, nonrecording gage at Lakeside about 1 mi (1.6 km) west of Chelan at datum 1,070.18 ft (326.191 m) above mean sea level, adjustment of 1912. Jan. 1 to June 30, 1905, nonrecording gage at upper highway bridge at Chelan at different datum. Dec. 5, 1910, to Nov. 13, 1927, nonrecording gage at Forest Service boat landing at Chelan at datum 1,076.07 ft (327.986 m) above mean sea level, adjustment of 1912.

REMARKS.--Reservoir is formed by low concrete dam at lake outlet completed Sept. 3, 1927. Usable capacity between elevations 1,079 (328.9 m) and 1,100 ft (335.3 m) 677,400 acre-ft (835 hm³). Regulation between these elevations is allowed by stipulation of the Federal Power Commission. Water is used for power development. Elevation of lake maintained between 1,092 (332.8 m) and 1,100 ft (335.3 m) during period Aug. 16 to Sept. 15 for scenic effect and recreational purposes. Diversions for irrigation of about 6,280 acres (25 km²) with an annual depletion of about 11,000 acre-ft (13.6 hm³), 1946 estimated.

COOPERATION.--Gage height record collected in cooperation with Public Utility District No. 1 of Chelan County.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,100.08 ft (335.304 m) Aug. 7, 1976 (affected by seiche action): maximum contents, 678,000 acre-ft (836 hm³) July 20, 1976, elevation, 1,100.02 ft (335.286 m); minimum since completion of dam in 1927, 1,079.68 ft (329.086 m) Apr. 3, 4, 1937, Apr. 3, 1970, contents, 21,350 acre-ft (26.3 hm³); minimum elevation, 1,076.78 ft (328.203 m), Jan. 27, 28, Dec. 2-5, 1898.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,100.08 ft (335.304 m) Aug. 7 (affected by seiche action); maximum contents, 678,000 acre-ft (836 hm³) July 20, elevation, 1,100.02 ft (335.286 m); minimum elevation, 1,090.17 ft (332.284 m) Apr. 19; minimum contents 356,400 acre-ft (439 hm³) Apr. 19, elevation, 1,090.17 ft (332.284 m).

Capacity table (elevation in feet, and usable contents, in acre-feet)
(Based on data by the Washington Water Power Co.)

1,080	31,500	1,090	350,900	1,100	677,400
1,085	190,200	1,095	513,300		

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1097.96	1096.05	1095.25	1096.81	1094.90	1093.35	1090.76	1090.58	1094.25	1098.75	1099.92	1099.80
2	1097.88	1096.00	1095.50	1096.74	1094.84	1093.26	1090.68	1090.70	1094.29	1098.72	1099.84	1099.85
3	1097.79	1095.95	1095.96	1096.68	1094.79	1093.16	1090.58	1090.93	1094.30	1098.76	1099.82	1099.80
4	1097.75	1095.97	1096.60	1096.61	1094.73	1093.09	1090.52	1091.00	1094.34	1098.89	1099.83	1099.75
5	1097.68	1096.00	1096.90	1096.55	1094.66	1092.96	1090.44	1091.23	1094.34	1099.05	1099.85	1099.74
6	1097.58	1096.04	1097.07	1096.45	1094.60	1092.90	1090.40	1091.37	1094.39	1099.11	1099.91	1099.75
7	1097.53	1096.05	1097.15	1096.36	1094.51	1092.81	1090.34	1091.42	1094.45	1099.06	1099.92	1099.68
8	1097.41	1096.04	1097.22	1096.30	1094.46	1092.73	1090.29	1091.55	1094.59	1099.32	1099.72	1099.61
9	1097.32	1096.00	1097.32	1096.23	1094.40	1092.63	1090.26	1091.68	1094.82	1099.44	1099.81	1099.55
10	1097.28	1095.95	1097.51	1096.15	1094.30	1092.58	1090.25	1091.88	1095.74	1099.45	1099.91	1099.50
11	1097.21	1095.87	1097.60	1096.12	1094.25	1092.50	1090.27	1092.00	1095.39	1099.49	1099.98	1099.44
12	1097.12	1095.80	1097.62	1096.04	1094.19	1092.38	1090.26	1091.99	1095.62	1099.63	1099.91	1099.36
13	1097.05	1095.76	1097.66	1095.94	1094.14	1092.28	1090.29	1092.00	1095.79	1099.60	1099.86	1099.28
14	1096.95	1095.75	1097.65	1095.91	1094.08	1092.20	1090.29	1092.08	1095.89	1099.56	1099.91	1099.21
15	1096.85	1095.77	1097.64	1095.85	1094.02	1092.10	1090.30	1092.15	1096.04	1099.60	1099.92	1099.16
16	1096.77	1095.76	1097.64	1095.79	1094.00	1092.02	1090.27	1092.26	1096.30	1099.76	1099.96	1099.10
17	1096.73	1095.75	1097.60	1095.76	1093.93	1091.94	1090.24	1092.39	1096.62	1099.92	1099.92	1099.05
18	1096.74	1095.70	1097.59	1095.74	1093.91	1091.98	1090.24	1092.49	1096.98	1099.89	1099.92	1099.00
19	1096.76	1095.65	1097.55	1095.69	1093.85	1091.86	1090.19	1092.58	1097.42	1099.91	1099.89	1098.97
20	1096.70	1095.60	1097.50	1095.65	1093.75	1091.75	1090.26	1092.66	1097.76	1099.88	1099.91	1098.90
21	1096.67	1095.52	1097.44	1095.59	1093.69	1091.62	1090.29	1092.79	1097.88	1099.74	1099.91	1098.89
22	1096.64	1095.46	1097.37	1095.51	1093.60	1091.57	1090.35	1092.90	1097.89	1099.70	1099.88	1098.86
23	1096.58	1095.40	1097.34	1095.45	1093.54	1091.49	1090.36	1093.10	1097.86	1099.78	1099.88	1098.80
24	1096.47	1095.37	1097.30	1095.39	1093.47	1091.48	1090.39	1093.25	1097.96	1099.92	1099.87	1098.76
25	1096.42	1095.38	1097.22	1095.31	1093.44	1091.39	1090.36	1093.42	1098.05	1099.90	1099.91	1098.73
26	1096.39	1095.37	1097.22	1095.23	1093.49	1091.30	1090.31	1093.54	1098.10	1099.85	1099.91	1098.69
27	1096.31	1095.33	1097.20	1095.20	1093.54	1091.23	1090.33	1093.69	1098.14	1099.80	1099.89	1098.64
28	1096.24	1095.29	1097.10	1095.14	1093.55	1091.16	1090.38	1093.91	1098.22	1099.72	1099.86	1098.60
29	1096.23	1095.21	1097.05	1095.10	1093.46	1091.01	1090.44	1094.05	1098.46	1099.82	1099.82	1098.55
30	1096.20	1095.20	1097.00	1095.02	---	1090.94	1090.52	1094.15	1098.67	1099.96	1099.81	1098.55
31	1096.15	---	1096.92	1094.96	---	1090.86	---	1094.20	---	1099.90	1099.80	---
MEAN	1096.95	1095.70	1097.15	1095.85	1094.07	1092.08	1090.36	1092.38	1096.35	1099.54	1099.88	1099.19
MAX	1097.96	1096.05	1097.66	1096.81	1094.90	1093.35	1090.76	1094.20	1098.67	1099.96	1099.98	1099.85
MIN	1096.15	1095.20	1095.25	1094.96	1093.44	1090.86	1090.19	1090.58	1094.25	1098.72	1099.72	1098.55
†	549,300	521,800	573,500	514,000	462,300	377,400	369,000	489,300	638,200	674,100	670,800	629,300
‡	-62,200	-27,500	+51,700	-59,500	-51,700	-84,900	-8,400	+120,300	+148,900	+35,900	-3,300	-41,500

CAL YR 1975: MAX 1,099.93 MIN 1,080.41 ‡ +237,800
WTR YR 1976: MAX 1,099.98 MIN 1,090.19 ‡ +17,800

† Contents, in acre-feet, at 2400 hours, on last day of month.
‡ Change in contents, in acre-feet.

12452500 CHELAN RIVER AT CHELAN, WA

LOCATION.--Lat 47°50'05", long 120°00'43", in S½SE¼ sec.13, T.27 N., R.22 E., Chelan County, Hydrologic Unit 17020009, near right bank in forebay upstream from control dam at outlet of Lake Chelan, 0.4 mi (0.6 km) south of Chelan, and at mile 4.3 (6.9 km).

DRAINAGE AREA.--924 m² (2,393 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1903 to current year. Published as "below Chelan Lake" 1904-05. Adjusted records for October 1903 to September 1911, published in WSP 482, 492, and 870 are unreliable and should not be used.

REVISED RECORDS.--WSP 482: 1904-13. WSP 612: 1924. WSP 1246: 1951. WSP 1286: 1952. WSP 1933: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is at mean sea level, adjustment of 1912. Prior to Jan. 7, 1927, nonrecording gage at site 800 ft (244 m) downstream and Jan. 7 to Sept. 30, 1927, nonrecording gage about 500 to 1,000 ft (152 to 305 m) downstream at same datum. Oct. 1, 1927, to Nov. 10, 1928, nonrecording gage and Nov. 11, 1928, to Mar. 19, 1939, water-stage recorder at sites 2.5 mi (4.0 km) downstream at same datum.

REMARKS.--Records good. Unmeasured water that is diverted for irrigation above station is a small percentage of total runoff. Chelan County Public District No. 1 diverts water at Chelan to develop about 40,000 KW and to irrigate an unknown area near Chelan. This quantity is included in records of daily discharge. Diversions for irrigation of about 6,280 acres (25 km²), depletion 11,000 acre-ft (13.6 hm³) 1964 estimate. Flow regulated by Lake Chelan (see sta 12452000).

COOPERATION.--Records of water used for power and irrigation furnished by the Public Utility District No. 1 of Chelan County.

AVERAGE DISCHARGE.--72 years (water years 1905-76), 2,078 ft³/s (58.85 m³/s) 30.54 in/yr (776 mm/yr), 1,506,000 acre-ft (1,860 hm³/yr), adjusted for storage since October 1911.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 18,400 ft³/s (521 m³/s) June 3, 1968; no flow part of day Jan. 30, 1917, when lake outlet was blocked with ice, and at other times owing to artificial regulation.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 9,240 ft³/s (262 m³/s) July 20; minimum daily, 2 ft³/s (0.057 m³/s) Feb. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1820	1890	2180	2200	2200	2150	2190	2190	3590	5800	4560	2330
2	1810	1900	2200	2200	2200	2140	2170	2190	3090	5300	5150	2340
3	1820	1840	2180	2200	2200	2140	2200	2190	2590	3650	4720	2340
4	1860	1930	2200	2200	2200	2140	2200	2190	2580	3250	4280	2350
5	1840	1970	2200	2200	2200	2130	2200	2120	2520	4490	3340	2350
6	1860	1970	2200	2200	2200	2150	2200	3620	2450	7150	2850	2350
7	1870	1960	2200	2200	2200	2120	2210	6430	2450	6940	8650	2180
8	1890	1980	2200	2190	2200	2160	2210	5850	2460	6130	4550	2110
9	1910	2040	1320	2200	2200	2180	2210	6750	2450	6110	2140	2120
10	1910	2010	1120	2200	2200	2170	2210	7250	2460	5560	1950	2070
11	1920	2020	2180	2200	2200	2160	2210	7770	2490	3940	3710	2120
12	1910	2010	2170	2200	2200	2170	2210	7650	2510	4990	5290	2130
13	1910	2000	2200	2200	2200	2180	2210	6480	2510	5850	2760	2110
14	1930	2000	2190	2200	2200	2180	2210	5680	2460	4860	3740	2130
15	1910	1990	2200	2200	2200	2190	2210	5410	2530	3150	3740	2110
16	1910	1990	2200	2200	2200	2200	2210	5580	2540	2840	3740	2110
17	1910	1990	2200	2200	2200	2200	2210	5150	2540	6570	3210	2110
18	1910	1990	2200	2200	2200	2200	2210	4960	2600	6710	2430	2110
19	1910	2000	2200	2200	2200	2200	1390	4350	3630	6570	2430	2120
20	1910	1990	2200	2200	2200	2200	905	3500	5080	9240	834	2110
21	1910	2100	2200	2200	2200	2200	786	3110	7240	6760	2430	2110
22	1900	2200	2200	2200	2200	2200	716	3150	7780	3470	2430	2110
23	1900	2190	2200	2200	2200	2190	1380	3150	5710	2470	2430	2110
24	1890	2190	2200	2200	2180	2190	2210	3160	3440	4030	2430	2110
25	1890	2190	2200	2200	2.0	2190	2210	3370	3440	6370	2430	2110
26	1900	2200	2200	2200	2.0	2190	1410	3380	3440	5110	2430	2110
27	1900	2200	2200	2200	512	2190	1010	3380	3440	5110	2510	2110
28	1900	2160	2200	2200	2180	2200	1010	3420	2950	3840	2430	2080
29	1900	2190	2200	2200	2150	2200	1010	3400	3240	2530	2340	1460
30	1870	2190	2200	2200	---	2170	1420	3410	4770	2720	2360	2020
31	1880	---	2200	2200	---	2200	---	3470	---	5960	2350	---
TOTAL	58560	61280	66140	68190	57626.0	67480	55137	133710	100980	157470	100644	64030
MEAN	1889	2043	2134	2200	1987	2177	1838	4313	3366	5080	3247	2134
MAX	1930	2200	2200	2200	2200	2200	2210	7770	7780	9240	8650	2350
MIN	1810	1840	1120	2190	2.0	2120	716	2120	2450	2470	834	1460
AC-FT	116200	121500	131200	135300	114300	133800	109400	265200	200300	312300	199600	127000
†	-62,200	-27,500	+51,700	-59,500	-51,700	-84,900	-8,400	+120,300	+148,900	+35,900	-3,300	-41,500
MEAN‡	878	1,580	2,975	1,233	1,088	795	1,697	6,269	5,869	5,663	3,192	1,437
CFSM‡	.95	1.71	3.22	1.33	1.18	.86	1.84	6.78	6.35	6.13	3.45	1.56
IN.‡	1.10	1.91	3.71	1.54	1.27	.99	2.05	7.82	7.09	7.07	3.98	1.74
AC-FT‡	54,000	94,000	182,900	75,800	62,600	48,900	101,000	385,500	349,200	348,200	196,300	85,500

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CAL YR 1975:  TOTAL  788,117.0  MEAN   2,159  MAX  11,500  MIN  18    AC-FT  1,563,000
    DO.....:  MEAN‡     2,488   CFSM‡  2.69   IN.‡  36.56  AC-FT‡  1,801,000
WTR YR 1976:  TOTAL  991,247.0  MEAN   2,708  MAX   9,240  MIN   2.0  AC-FT  1,966,000
    DO.....:  MEAN‡     2,733   CFSM‡  2.96   IN.‡  40.28  AC-FT‡  1,984,000
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† Change in contents, in acre-feet, in Lake Chelan.

‡ Adjusted for change in contents in Lake Chelan.

12452500 CHELAN RIVER AT CHELAN, WA --Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962-1972, 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
21...	1150	1910	54	7.0	12.8	13	5
28...	1130	1900	50	7.7	12.2	13	2
NOV							
11...	1050	2020	48	7.6	9.3	4	2
18...	1125	1990	59	7.5	8.7	4	1
DEC							
09...	1050	1320	51	7.4	7.4	4	2
16...	1130	2200	52	7.9	4.6	4	2
JAN							
06...	1110	2200	51	7.1	3.5	4	4
20...	1055	2200	51	7.3	4.3	4	4
FEB							
03...	0955	2200	53	7.2	4.3	4	3
24...	1105	2180	53	7.1	5.8	4	4
MAR							
09...	1050	2180	50	6.9	5.3	0	3
23...	1045	2190	53	7.2	6.7	4	3
APR							
13...	1115	2210	65	7.6	9.8	4	3
27...	1045	1010	54	7.8	11.2	13	5
MAY							
11...	1110	7770	51	7.3	13.8	13	2
25...	1025	3370	52	7.3	13.8	4	4
JUN							
08...	1125	2460	51	7.3	15.5	4	3
22...	1045	7780	50	7.4	16.7	0	4
JUL							
13...	1040	5850	53	7.5	17.7	4	3
27...	1045	5110	55	7.5	19.2	4	2
AUG							
10...	1105	1950	54	7.7	19.5	8	2
24...	1045	2430	50	7.5	19.7	4	2
SEP							
14...	1040	2130	50	7.7	18.1	4	1
21...	1045	2110	51	7.7	18.2	0	1

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
21...	10.0	B10	B4	.82	.29	.05	.00
28...	10.0	B4	B4	.02	.04	.00	.00
NOV							
11...	10.6	B2	<2	.01	.02	.00	.00
18...	10.8	B5	<2	.02	.03	.00	.00
DEC							
09...	11.2	B2	<2	.03	.02	.01	.00
16...	11.6	B8	<2	.03	.06	.01	.00
JAN							
06...	11.9	B2	<2	.05	.03	.01	.00
20...	11.9	B4	<2	.05	.04	.01	.01
FEB							
03...	12.1	B2	<2	.06	.10	.01	.00
24...	12.0	B2	<2	.06	.02	.01	.00
MAR							
09...	12.2	B2	<2	.05	.02	.00	.00
23...	12.1	<2	<2	.07	.03	.01	.00
APR							
13...	11.6	2	<2	.03	.02	.01	.00
27...	10.9	<2	<2	.04	.03	.02	.00
MAY							
11...	11.3	<2	<2	.04	.02	.00	.00
25...	10.6	<2	<2	.03	.04	.00	.00
JUN							
08...	10.7	<2	<2	.02	.02	.00	.00
22...	10.4	<2	<2	.02	.04	.00	.00
JUL							
13...	9.8	44	<2	.01	.03	.01	.00
27...	9.3	<2	<2	.02	.08	.01	.00
AUG							
10...	9.3	B12	B18	.05	.08	.01	.00
24...	9.0	44	<2	.01	.02	.01	.00
SEP							
14...	9.5	90	<2	.00	.02	.00	.00
21...	9.2	<2	<2	.00	.02	.00	.00

12452800 ENTIAT RIVER NEAR ARDENVOIR, WA

LOCATION.--Lat 47°49'07", long 120°25'19", in NE¼NE¼ sec.27, T.27 N., R.19 E., Chelan County, Hydrologic Unit 17020010, on left bank 0.5 mi (0.8 km) downstream from Stormy Creek, 6.0 mi (9.7 km) northwest of Ardenvoir, and at mile 18.0 (29.0 km).

DRAINAGE AREA.--203 mi^2 (526 km^2).

PERIOD OF RECORD.--September 1957 to current year. Water temperatures July 1968 to September 1970.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,560.97 ft (475.784 m) above mean sea level, unadjusted.

REMARKS.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion.

AVERAGE DISCHARGE.--19 years, 400 ft^3/s (11.33 m^3/s), 26.76 in/yr (680 mm/yr), 289,800 acre-ft/yr (357 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,430 ft^3/s (182 m^3/s) June 10, 1972, gage height, 8.98 ft (2.737 m); minimum daily, 25 ft^3/s (0.71 m^3/s) Dec. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,560 ft^3/s (101 m^3/s) Dec. 4, gage height, 7.00 ft (2.134 m); minimum discharge, 98 ft^3/s (2.78 m^3/s) Oct. 2, 3, gage height, 1.34 ft (0.408 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	149	380	197	233	162	171	509	1070	1560	751	297
2	98	162	700	196	235	162	169	672	974	1360	742	298
3	101	200	1100	194	235	156	171	819	898	1280	752	277
4	118	260	1750	192	228	155	182	887	855	1280	754	265
5	115	280	1200	192	205	158	201	992	814	1390	694	258
6	124	260	900	190	185	165	242	1030	819	1620	657	253
7	111	240	700	188	195	160	251	1150	871	1860	791	235
8	106	230	580	186	200	158	268	1480	1020	1930	775	217
9	110	220	591	184	205	158	304	1840	1280	1850	683	201
10	133	200	554	184	210	160	329	2000	1540	1600	622	189
11	125	195	520	182	217	158	375	1900	1600	1390	589	184
12	118	190	486	178	222	158	408	1700	1460	1320	580	178
13	115	190	465	178	213	158	425	1650	1300	1280	568	171
14	115	260	450	178	207	158	429	1710	1240	1230	536	169
15	130	290	457	197	201	158	425	1690	1320	1180	503	167
16	122	280	425	235	211	158	404	1670	1510	1240	501	163
17	146	260	408	224	205	160	388	1730	1790	1390	461	163
18	165	240	391	219	201	165	375	1620	2020	1380	436	180
19	160	230	362	213	191	167	365	1510	2290	1290	416	200
20	167	225	329	215	188	165	378	1370	2260	1270	406	220
21	158	215	296	217	182	162	368	1320	2000	1200	393	215
22	151	215	307	217	182	162	375	1330	1780	1010	353	205
23	144	220	293	216	180	160	375	1430	1660	902	346	195
24	136	270	288	212	178	173	381	1460	1580	981	360	188
25	144	265	281	210	176	167	359	1390	1440	1000	389	182
26	138	260	293	205	174	165	350	1320	1320	924	368	174
27	138	255	244	265	174	163	359	1410	1280	850	330	169
28	139	250	235	242	169	162	368	1480	1350	788	307	163
29	163	248	235	233	167	160	381	1410	1610	782	297	160
30	167	245	239	230	---	163	432	1290	1760	790	288	158
31	158	---	222	230	---	174	---	1180	---	748	290	---
TOTAL	4115	7004	15681	6399	5769	5010	10008	42949	42711	38675	15938	6094
MEAN	133	233	506	206	199	162	334	1385	1424	1248	514	203
MAX	167	290	1750	265	235	174	432	2000	2290	1930	791	298
MIN	98	149	222	178	167	155	169	509	814	748	288	158
CFSM	.66	1.15	2.49	1.01	.98	.80	1.65	6.82	7.01	6.15	2.53	1.00
IN.	.75	1.28	2.87	1.17	1.06	.92	1.83	7.87	7.83	7.09	2.92	1.12
AC-FT	8160	13890	31100	12690	11440	9940	19850	85190	84720	76710	31610	12090

CAL YR 1975 TOTAL 169470 MEAN 464 MAX 2990 MIN 60 CFSM 2.29 IN 31.06 AC-FT 336100
WTR YR 1976 TOTAL 200353 MEAN 547 MAX 2290 MIN 98 CFSM 2.69 IN 36.71 AC-FT 397400

NOTE.--No gage-height record Nov. 3 to Dec. 8.

12452990 ENTIAT RIVER NEAR ENTIAT, WA

LOCATION.--Lat 47°39'48", long 120°14'58", in NW¼SE¼ sec.18, T.25 N., R.21 E., Chelan County, Hydrologic Unit 17020010, at road bridge 1.2 mi (1.9 km) west of Entiat High School and at mile 1.4 (2.3 km).

DRAINAGE AREA.--419 mi² (1,085 km²).

PERIOD OF RECORD.--Water years 1959-70, 1972, 1975 to September 1976 (discontinued). See REMARKS.

REMARKS.--Prior to October 1974 published as 12453000. Prior to September 1970 samples taken at site 1.7 mi (2.7 km) upstream.

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
21...	1015	192	84	6.5	7.3	21	3
28...	1025	164	87	7.4	5.1	21	5
NOV							
11...	1010	255	76	7.7	2.4	13	2
18...	1025	329	67	7.5	.8	13	1
DEC							
09...	1010	908	62	7.9	3.9	13	4
16...	1030	714	67	7.4	.1	8	2
JAN							
06...	1025	362	88	7.4	.0	8	3
20...	1015	341	84	7.3	.1	4	2
FEB							
03...	0925	277	83	7.4	1.4	13	3
24...	1015	273	94	8.0	3.0	9	3
MAR							
09...	1010	222	93	7.4	3.6	4	4
23...	1005	266	113	7.3	4.4	4	2
APR							
13...	1035	690	95	7.7	6.8	17	8
27...	1010	531	105	7.6	8.3	17	6
MAY							
11...	1035	2300	45	7.3	7.6	17	10
25...	1000	1860	47	7.0	7.3	13	4
JUN							
08...	1045	1360	50	7.3	9.8	13	7
22...	1010	2310	38	7.3	8.6	4	6
JUL							
13...	1000	1670	40	7.3	10.1	13	4
27...	1010	1120	50	7.4	10.7	13	4
AUG							
10...	1020	726	51	7.3	13.1	13	3
24...	0950	430	64	7.7	14.2	8	2
SEP							
14...	0945	219	83	7.7	12.0	8	1
21...	1000	222	83	8.0	13.1	13	1

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
21...	12.0	B700	78	.09	.10	.02	.00
28...	12.4	400	B2	.15	.06	.02	.01
NOV							
11...	14.3	B100	B4	.07	.03	.00	.00
18...	14.7	310	B6	.07	.02	.01	.00
DEC							
09...	13.0	B120	<2	.05	.03	.02	.00
16...	14.5	110	<2	.07	.06	.02	.00
JAN							
06...	14.1	130	B12	.11	.11	.02	.01
20...	15.0	44	B10	.08	.05	.01	.01
FEB							
03...	13.8	46	<2	.08	.06	.01	.00
24...	14.5	B34	<2	.03	.04	.02	.00
MAR							
09...	14.1	>74	<2	.04	.02	.01	.00
23...	13.2	420	B120	.06	.03	.02	.00
APR							
13...	12.5	210	10	.03	.05	.03	.00
27...	11.9	B120	2	.01	.03	.02	.00
MAY							
11...	12.0	180	2	.06	.05	.07	.05
25...	12.1	42	<2	.04	.02	.03	.00
JUN							
08...	11.5	100	12	.02	.02	.02	.00
22...	12.0	B80	<2	.03	.04	.03	.00
JUL							
13...	11.6	B200	B2	.03	.04	.02	.00
27...	11.3	52	B2	.04	.08	.02	.00
AUG							
10...	10.6	590	120	.02	.09	.03	.01
24...	10.4	780	B20	.02	.02	.01	.00
SEP							
14...	10.9	B300	B2	.07	.02	.01	.00
21...	10.8	180	B18	.02	.02	.01	.00

B Results based upon colony counts outside the ideal range.

12453700 COLUMBIA RIVER AT ROCKY REACH DAM, WA

LOCATION.--Lat 47°31'28", long 120°18'04", in SW¼NW¼ sec.2, T.23 N., R.20 E., Chelan County, Hydrologic Unit 17020010, on right bank 0.5 mi (0.8 km) downstream from Rocky Reach Dam, 1.5 mi (2.4 km) downstream from Swakane Creek, 7.4 mi (11.9 km) north of Wenatchee, and at mile 473.4 (761.7 km).

DRAINAGE AREA.--87,800 mi² (227,400 km²), approximately.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Auxiliary water-stage recorder. 1.9 mi (3.1 km) downstream from base gage at same datum.

REMARKS.--Records good. Flow regulated by nine major reservoirs and numerous smaller reservoirs and powerplants. Diversion by Feeder Canal for Columbia Basin project (see sta 12435500) and for irrigation of about 380,000 acres (1,540 km²) in the United States and an additional 35,000 acres (142 km²) in Canada.

AVERAGE DISCHARGE.--16 years, 121,700 ft³/s (3,447 m³/s), 88,170,000 acre-ft/yr (109,000 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 535,000 ft³/s (15,200 m³/s) June 10, 1961, elevation, about 635.50 ft (193.700 m); minimum daily, 25,100 ft³/s (711 m³/s) Nov. 11, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 265,000 ft³/s (7,500 m³/s) July 18, elevation, 623.68 ft (190.098 m); minimum daily, 39,000 ft³/s (1,100 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73300	90400	98900	120000	110000	145000	141000	136000	194000	168000	174000	150000
2	69000	71600	77000	115000	133000	157000	132000	135000	170000	161000	199000	147000
3	58600	87600	78800	100000	128000	157000	101000	141000	166000	164000	231000	147000
4	39000	74900	79000	119000	137000	149000	93000	162000	155000	154000	228000	156000
5	46300	86100	90900	129000	136000	151000	119000	152000	150000	168000	230000	144000
6	70300	97800	73600	122000	148000	158000	114000	139000	149000	153000	214000	132000
7	74100	96700	92500	114000	143000	156000	106000	172000	150000	169000	221000	215000
8	74700	94300	124000	114000	136000	158000	104000	199000	134000	158000	191000	194000
9	69500	72300	96400	118000	148000	142000	80100	225000	148000	163000	188000	188000
10	58400	93600	106000	120000	152000	150000	44000	222000	163000	173000	199000	155000
11	54100	90100	128000	112000	152000	141000	95700	216000	169000	152000	212000	125000
12	43400	86200	126000	114000	150000	134000	137000	191000	143000	158000	198000	127000
13	69500	93600	96500	113000	141000	131000	145000	188000	143000	173000	186000	129000
14	85800	82000	89800	102000	111000	143000	169000	189000	143000	184000	142000	120000
15	84400	94800	112000	112000	103000	130000	162000	184000	146000	198000	151000	120000
16	80200	95000	115000	132000	132000	126000	173000	188000	151000	202000	172000	113000
17	66400	117000	135000	98500	138000	133000	188000	182000	153000	225000	192000	112000
18	59100	116000	118000	89300	157000	146000	158000	189000	156000	243000	232000	103000
19	56700	115000	109000	116000	144000	128000	151000	187000	166000	242000	223000	66500
20	80500	113000	118000	134000	135000	123000	149000	180000	175000	235000	203000	92600
21	99300	117000	113000	122000	121000	119000	144000	170000	180000	230000	183000	109000
22	107000	111000	121000	141000	137000	152000	132000	185000	203000	202000	181000	115000
23	93500	87400	120000	125000	161000	128000	139000	188000	191000	198000	161000	106000
24	94600	118000	97400	120000	158000	132000	138000	186000	184000	134000	143000	110000
25	88100	111000	74000	122000	137000	133000	131000	188000	181000	142000	148000	71500
26	70000	116000	102000	128000	150000	149000	144000	188000	163000	156000	148000	65000
27	99600	85800	88100	118000	159000	96900	141000	181000	153000	191000	227000	95800
28	95800	105000	79100	127000	150000	113000	142000	182000	158000	217000	220000	105000
29	79000	106000	120000	135000	147000	131000	142000	193000	168000	206000	186000	107000
30	99300	100000	123000	128000	---	128000	136000	190000	163000	197000	181000	107000
31	103000	---	117000	129000	---	140000	---	183000	---	167000	159000	---
TOTAL	2342500	2925200	3219000	3688800	4054000	4279900	3950800	5611000	4868000	5683000	5923000	3727400
MEAN	75560	97510	103800	119000	139800	138100	131700	181000	162300	183300	191100	124200
MAX	107000	118000	135000	141000	161000	158000	188000	225000	203000	243000	232000	215000
MIN	39000	71600	73600	89300	103000	96900	44000	135000	134000	134000	142000	65000
AC-FT	4646000	5802000	6385000	7317000	8041000	8489000	7836000	11130000	9656000	11270000	11750000	7393000

CAL YR 1975 TOTAL 40457300 MEAN 110800 MAX 208000 MIN 39000 AC-FT 80250000
WTR YR 1976 TOTAL 50272600 MEAN 137400 MAX 243000 MIN 39000 AC-FT 99720000

12454000 WHITE RIVER NEAR PLAIN, WA

LOCATION.--Lat 47°52'27", long 120°52'09", in NE¼NE¼ sec.5, T.27 N., R.16 E., Chelan County, Hydrologic Unit 17020011, Wenatchee National Forest, on left bank 200 ft (61 m) downstream from Forest Service bridge, 1.2 mi (1.9 km) downstream from Sears Creek, 12.5 mi (20.1 km) northwest of Plain, and at mile 6.4 (10.3 km).

DRAINAGE AREA.--150 mi² (388 km²).

PERIOD OF RECORD.--May 1911 to April 1912, May to September 1912 (monthly discharge only), July to August 1913, October 1913 to March 1914 (monthly discharge only), April to September 1914, August 1954 to current year. Published as "near Chiwaukum" 1911-14. Water temperatures October 1970 to June 1971.

REVISED RECORDS.--WSP 1316: 1914.

GAGE.--Water-stage recorder. Datum of gage is 1,881.92 ft (573.609 m) above mean sea level. May 1911 to September 1914, nonrecording gage at same site at different datum.

REMARKS.--Records good. No regulation or diversion.

AVERAGE DISCHARGE.--24 years (water years 1912, 1914, 1955-76), 831 ft³/s (23.53 m³/s), 75.23 in/yr (1,911 mm/yr), 602,100 acre-ft/yr (742 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,890 ft³/s (167 m³/s) June 17, 1974, gage height, 13.56 ft (4.133 m); maximum gage height, 13.87 ft (4.228 m) June 2, 1968; minimum daily discharge, 78 ft³/s (2.21 m³/s) Jan. 3-5, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 4	0900	*5,160	146	*13.19	4.020	July 8	1330	3,800	108	11.00	3.353
June 19	0300	3,540	100	10.48	3.194						

Minimum discharge, 172 ft³/s (4.87 m³/s) Oct. 14, gage height, 2.81 ft (0.856 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	439	1040	492	766	282	244	1240	1220	2160	1950	1030
2	221	635	2620	485	738	274	241	1780	1130	1890	1920	924
3	279	1040	4870	471	715	268	241	1770	1090	1970	2010	823
4	342	1450	4710	460	665	259	259	1820	1090	2130	1910	792
5	318	1270	2990	457	640	268	300	1750	1060	2440	1830	835
6	327	1120	2100	422	600	256	392	1720	1220	2980	1620	807
7	233	975	1640	408	572	253	392	2040	1430	3360	2290	634
8	204	858	1600	402	548	244	429	2680	1900	3570	1760	534
9	207	758	1740	382	516	247	530	3080	2290	2890	1570	478
10	274	688	1560	373	488	268	621	3280	2440	2220	1580	451
11	218	625	1340	367	481	262	723	2900	2160	2110	1630	468
12	196	579	1200	364	527	250	738	2340	1870	2280	1600	457
13	186	551	1080	345	481	250	750	2370	1580	2090	1370	435
14	178	850	971	336	453	247	731	2350	1490	2050	1140	456
15	418	1460	905	471	432	244	696	2220	1810	2210	1110	462
16	291	1100	817	731	436	250	642	2370	2530	2690	1140	497
17	874	940	754	782	415	256	621	2490	2770	3000	963	543
18	898	817	696	786	395	277	600	2030	3060	2820	1060	564
19	774	738	646	711	386	277	586	1850	3360	2590	956	580
20	758	688	621	665	376	262	639	1690	3040	2670	1140	608
21	618	628	586	632	360	253	607	1680	2710	2270	984	600
22	537	600	558	611	351	250	593	1850	2460	1710	904	587
23	467	586	534	576	342	247	572	2020	2170	1970	938	570
24	418	948	544	541	339	259	586	1850	2000	2520	970	539
25	418	845	527	513	327	250	576	1740	1730	2410	1140	509
26	398	805	523	499	315	259	572	1600	1520	2210	949	498
27	386	731	502	1120	312	256	621	2140	1580	1930	799	503
28	373	669	467	956	303	247	711	2050	1950	1730	917	494
29	411	604	537	858	294	239	813	1700	2760	2030	936	495
30	474	558	614	817	---	244	979	1510	2780	1900	905	468
31	432	---	523	786	---	253	---	1350	---	1960	944	---
TOTAL	12344	24555	39815	17819	13573	7951	17005	63260	60200	72760	40935	17641
MEAN	398	819	1284	575	468	256	567	2041	2007	2347	1320	588
MAX	898	1460	4870	1120	766	282	979	3280	3360	3570	2290	1030
MIN	178	439	467	336	294	239	241	1240	1060	1710	799	435
CFSM	2.65	5.46	8.56	3.83	3.12	1.71	3.78	13.6	13.4	15.6	8.80	3.92
IN.	3.06	6.09	9.87	4.42	3.37	1.97	4.22	15.69	14.93	18.04	10.15	4.37
AC-FT	24480	48700	78970	35340	26920	15770	33730	125500	119400	144300	81190	34990

CAL YR 1975 TOTAL 356221 MEAN 976 MAX 4870 MIN 145 CFSM 6.51 IN 88.34 AC-FT 706600
WTR YR 1976 TOTAL 387858 MEAN 1060 MAX 4870 MIN 178 CFSM 7.07 IN 96.19 AC-FT 769300

12457000 WENATCHEE RIVER AT PLAIN, WA

LOCATION.--Lat 47°45'47", long 120°39'54", in NE¼SW¼ sec.12, T.26 N., R.17 E., Chelan County, Hydrologic Unit 17020011, on left bank 300 ft (91 m) downstream from county road bridge at Plain, 0.3 mi (0.5 km) downstream from Beaver Creek, 2.2 mi (3.5 km) downstream from Chiwawa River, 11.3 mi (18.2 km) north of Leavenworth, and at mile 46.2 (74.3 km).

DRAINAGE AREA.--591 mi² (1,531 km²).

PERIOD OF RECORD.--October 1910 to current year. Published as "near Leavenworth" 1910-31.

REVISED RECORDS.--WSP 482: 1911-14. WSP 1316: 1914(M), 1916(M), 1919(M), 1921-23(M), 1927(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,805 ft (550.2 m), from river-profile map. Prior to Jan. 8, 1932, nonrecording gages at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Records excellent. Wenatchee Park Land and Irrigation Company diverts water from the Chiwawa River, above the station for irrigation of about 1,400 acres (5.6 km²) near Plain. Natural regulation by Wenatchee Lake 8.0 mi (12.9 km) upstream.

AVERAGE DISCHARGE.--66 years, 2,268 ft³/s (64.23 m³/s), 52.11 in/yr (1,324 mm/yr), 1,643,000 acre-ft/yr (2,030 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,700 ft³/s (643 m³/s) May 29, 1948, gage height, 12.43 ft (3.789 m), from high-water mark in well; minimum, 168 ft³/s (4.76 m³/s) Nov. 30, 1952, gage height, 1.31 ft (0.399 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,000 ft³/s (510 m³/s) Dec. 4, gage height, 10.85 ft (3.307 m); minimum, 500 ft³/s (14.2 m³/s) Oct. 2, gage height, 2.01 ft (0.613 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	507	1120	2240	1680	2290	1060	1010	3500	4470	7030	4240	1890
2	502	1370	5940	1640	2210	1020	989	4700	4070	6220	4130	1870
3	512	2270	12100	1610	2140	999	985	5400	3810	5880	4170	1730
4	595	2920	16600	1610	2040	980	1040	5800	3710	5890	4070	1640
5	647	3080	14700	1600	1870	930	1200	5900	3590	6300	4000	1580
6	720	2960	9890	1530	1800	930	1340	5600	3760	7180	3710	1580
7	689	2750	6970	1480	1800	940	1470	6000	4170	8310	4180	1540
8	636	2480	5770	1480	1760	920	1600	7200	5020	8820	4260	1370
9	601	2180	5810	1410	1710	900	1740	9000	6040	8690	3690	1220
10	647	1930	5420	1400	1630	930	2000	10000	7040	7270	3430	1120
11	641	1730	4730	1400	1610	940	2300	9800	7060	6310	3320	1060
12	607	1580	4150	1350	1760	980	2500	8800	6550	6110	3310	1020
13	572	1470	3690	1270	1750	960	2620	8200	5890	5840	3160	982
14	550	1810	3270	1270	1660	940	2600	8000	5210	5590	2810	963
15	665	2880	3040	1580	1580	930	2540	7800	5270	5590	2540	965
16	726	3200	2760	2210	1650	920	2420	7700	6430	6040	2520	962
17	921	2770	2530	2410	1610	930	2220	8200	7430	6900	2320	991
18	1370	2370	2340	2400	1560	960	2110	7600	8270	7100	2230	1000
19	1520	2100	2180	2300	1450	1000	2000	6800	9280	6600	2160	1010
20	1830	1930	2060	2180	1370	1050	2050	6210	9510	6420	2330	1040
21	1640	1770	1970	2050	1310	1040	2130	5850	8820	6110	2300	1060
22	1460	1660	1880	1980	1270	1030	2110	5930	8000	5100	2110	1070
23	1260	1670	1790	1900	1240	1020	2030	6380	7200	4550	2020	1050
24	1120	2140	1770	1790	1230	1040	2000	6360	6570	5140	1980	1010
25	1080	2800	1790	1720	1220	1090	2000	6180	6080	5480	2110	983
26	1050	2670	1830	1660	1180	1060	1950	5750	5310	5270	2200	952
27	999	2460	1820	2420	1170	1040	2000	6100	4970	4920	1990	931
28	968	2200	1700	2870	1160	1020	2100	6640	5220	4370	1900	917
29	1030	1930	1700	2680	1110	989	2350	6140	6510	4290	1920	907
30	1130	1830	1950	2520	---	978	2700	5580	7620	4350	1870	886
31	1170	---	1850	2390	---	1030	---	4980	---	4170	1860	---
TOTAL	28365	66030	136240	57790	46140	30556	58104	208100	182880	187840	88840	35299
MEAN	915	2201	4395	1864	1591	986	1937	6713	6096	6059	2866	1177
MAX	1830	3200	16600	2870	2290	1090	2700	10000	9510	8820	4260	1890
MIN	502	1120	1700	1270	1110	900	985	3500	3590	4170	1860	886
CFSM	1.55	3.72	7.44	3.15	2.69	1.67	3.28	11.4	10.3	10.3	4.85	1.99
IN.	1.79	4.16	8.58	3.64	2.90	1.92	3.66	13.10	11.51	11.82	5.59	2.22
AC-FT	56260	131000	270200	114600	91520	60610	115200	412800	362700	372600	176200	70020

CAL YR 1975 TOTAL 1015488 MEAN 2782 MAX 16600 MIN 502 CFSM 4.71 IN 63.92 AC-FT 2014000
WTR YR 1976 TOTAL 1126184 MEAN 3077 MAX 16600 MIN 502 CFSM 5.21 IN 70.89 AC-FT 2234000

12457880 WENATCHEE RIVER ABOVE ICICLE CREEK AT LEAVENWORTH, WA

LOCATION.--Lat 47°34'38", long 120°40'26", in SW¼NE¼ sec.14, T.24 N., R.17 E., Chelan County, Hydrologic Unit 17020011, at Icicle Creek Road bridge, 0.8 mi (1.3 km) upstream from Icicle Creek and 0.9 mi (1.4 km) south of Leavenworth city limits.

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
21...	0900	2760	34	7.7	9.0	25	3
28...	0905	1090	36	7.1	7.2	25	3
NOV							
11...	0850	2160	34	7.4	4.2	13	2
18...	0900	3170	31	7.3	3.2	17	1
DEC							
09...	0855	8060	30	7.3	4.1	25	4
16...	0915	1290	35	7.4	1.6	17	3
JAN							
06...	0905	1790	36	7.1	.1	17	3
20...	0910	2850	37	7.0	.3	21	2
FEB							
03...	0825	2280	40	7.2	1.5	21	2
24...	0905	1460	47	7.9	2.5	22	4
MAR							
09...	0845	1030	45	7.0	2.8	13	3
23...	0840	1190	49	7.1	3.7	13	3
APR							
13...	0915	3600	46	7.6	5.2	21	8
27...	0855	2720	49	7.4	7.4	21	2
MAY							
11...	0920	13100	33	7.2	6.7	21	7
25...	0840	8340	34	7.3	6.9	17	5
JUN							
08...	0935	6660	34	7.3	9.8	13	8
22...	0855	11000	29	7.3	9.1	4	5
JUL							
13...	0840	7940	27	7.3	10.2	13	5
27...	0900	6660	40	7.2	11.4	13	3
AUG							
10...	0915	4670	28	7.1	12.2	13	1
24...	0825	2490	30	7.3	14.0	8	2
SEP							
14...	0825	1090	36	7.5	13.2	8	1
21...	0830	1080	35	7.4	13.3	17	1

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
21...	11.4	--	--	.04	.07	.01	.00
28...	11.9	B160	<10	.02	.06	.00	.00
NOV							
11...	13.0	B120	B2	.05	.03	.00	.00
18...	13.5	B90	<2	.06	.02	.00	.00
DEC							
09...	13.2	B130	B4	.05	.03	.02	.00
16...	14.0	80	<2	.06	.06	.02	.00
JAN							
06...	14.0	B20	<2	.05	.04	.01	.00
20...	14.7	B26	<2	.06	.06	.01	.00
FEB							
03...	14.2	B12	<2	.06	.02	.00	.00
24...	13.5	B60	B2	.04	.06	.01	.00
MAR							
09...	13.4	B20	B2	.02	.02	.01	.00
23...	13.3	B18	<2	.61	.03	.01	.00
APR							
13...	13.2	40	<2	.03	.02	.02	.00
27...	11.9	42	<2	.06	.03	.01	.00
MAY							
11...	12.9	80	2	.08	.02	.04	.00
25...	12.5	42	2	.06	.02	.01	.00
JUN							
08...	11.6	86	16	.05	.04	.01	.00
22...	12.2	76	<2	.05	.03	.01	.00
JUL							
13...	11.7	60	B2	.04	.06	.01	.00
27...	11.1	76	<2	.04	.07	.01	.00
AUG							
10...	10.9	B12	<2	.02	.06	.01	.00
24...	10.0	B8	B2	.00	.02	.01	.00
SEP							
14...	10.2	B160	<2	.00	.04	.01	.00
21...	10.0	B40	<2	.00	.02	.01	.00

B Results based upon colony counts outside the ideal range.

12458500 ICICLE CREEK NEAR LEAVENWORTH, WA

LOCATION.--Lat 47°33'49", long 120°40'00", in SW¼NW¼ sec.24, T.24 N., R.17 E., Chelan County, Hydrologic Unit 17020011, at county road bridge 1.8 mi (2.9 km) south of Leavenworth city limits and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--211 mi² (546 km²).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT									
21...	0915	652	42	7.6	6.3	33	2	11.8	B180
28...	0930	245	49	7.0	4.3	29	4	12.5	B150
NOV									
11...	0920	400	44	7.5	1.8	17	2	13.9	B25
18...	0925	540	43	7.5	.7	21	2	14.3	B40
DEC									
09...	0915	1850	38	7.6	3.4	33	3	13.2	B30
16...	0930	769	46	7.3	.7	17	2	14.0	B30
JAN									
06...	0920	500	49	7.3	.2	17	4	14.2	B14
20...	0925	756	47	7.0	.2	17	2	14.5	B8
FEB									
03...	0840	476	50	7.0	1.3	17	3	14.1	B28
24...	0920	356	63	7.6	2.3	9	2	13.4	B30
MAR									
09...	0905	263	60	7.0	2.1	8	4	13.5	42
23...	0905	257	68	7.1	3.8	8	3	13.3	B16
APR									
13...	0935	652	58	7.5	5.1	25	3	12.8	B26
27...	0915	400	63	7.4	6.7	21	2	11.6	14
MAY									
11...	0935	2940	36	7.2	5.5	25	3	13.2	B20
25...	0855	1720	39	7.3	5.6	17	2	12.6	B28
JUN									
08...	0950	1490	38	7.3	7.4	17	7	12.1	46
22...	0915	2410	32	7.3	7.5	8	3	12.5	46
JUL									
13...	0900	1660	32	7.2	8.0	13	4	12.2	B30
27...	0915	1260	30	7.2	9.5	13	4	11.5	150
AUG									
10...	0925	800	35	7.3	11.4	13	2	11.2	B27
24...	0850	460	37	7.3	12.4	13	1	9.9	>170
SEP									
14...	0845	188	50	7.4	10.7	13	1	10.4	460
21...	0850	185	50	7.4	12.1	4	1	10.1	B120

DATE	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT								
21...	<10	.03	.00	.08	.21	.29	.02	.00
28...	<2	.02	.00	.05	.08	.13	.02	.00
NOV								
11...	<2	.03	.00	.02	.06	.08	.00	.00
18...	B2	.03	.00	.03	.07	.10	.00	.00
DEC								
09...	<2	.03	.00	.03	.05	.08	.01	.00
16...	<2	.03	.00	.05	.11	.16	.01	.00
JAN								
06...	<2	.02	.01	.03	.10	.13	.01	.00
20...	<2	.05	.00	.06	.16	.22	.01	.00
FEB								
03...	B2	.06	.00	.09	.19	.28	.01	.00
24...	<2	.04	.00	.07	.28	.35	.01	.00
MAR								
09...	<2	.03	.00	.02	.05	.07	.01	.00
23...	<2	.04	.00	.03	.11	.14	.01	.00
APR								
13...	<2	.02	.00	.02	.12	.14	.01	.00
27...	<2	.02	.00	.03	.04	.07	.01	.00
MAY								
11...	<2	.06	.00	.02	.09	.11	.01	.00
25...	2	.03	.00	.02	.06	.08	.00	.00
JUN								
08...	2	.03	.00	.03	.05	.08	.01	.00
22...	<2	.03	.00	.03	.07	.10	.01	.00
JUL								
13...	B2	.01	.00	.05	.16	.21	.02	.00
27...	<2	.02	.00	.06	.19	.25	.02	.01
AUG								
10...	<2	.01	.00	.06	.18	.24	.01	.00
24...	B4	.00	.00	.02	.06	.08	.02	.00
SEP								
14...	B28	.01	.00	.05	.05	.10	.01	.00
21...	B2	.00	.00	.04	.04	.08	.01	.00

B Results based upon colony counts outside the ideal range.

12459000 WENATCHEE RIVER AT PESHASTIN, WA

LOCATION.--Lat 47°35'00", long 120°36'46", in SE¼SW¼ sec.8, T.24 N., R.18 E., Chelan County, Hydrologic Unit 17020011, on right bank 1.0 mi (1.6 km) northwest of Peshastin, 3.5 mi (5.6 km) upstream from Peshastin Creek, 4.1 mi (6.6 km) downstream from Icicle Creek, and at mile 21.5 (34.6 km).

DRAINAGE AREA.--1,000 mi² (2,600 km²), approximately.

PERIOD OF RECORD.--October 1928 to February 1929 (monthly discharge only), March 1929 to current year.

REVISED RECORDS.--WSP 1316: 1929-32(M).

GAGE.--Water-stage recorder. Datum of gage is 1,028.04 ft (313.347 m) above mean sea level. Prior to Mar. 24, 1932, nonrecording gage at site 1.2 mi (1.9 km) downstream at different datum.

REMARKS.--Records excellent. Numerous diversons upstream for irrigation of an estimated 3,200 acres (13 km²) upstream from station. Diversion from Icicle Creek 5.7 mi (9.2 km) upstream from mouth is used for irrigation of a substantial part of the 22,000 acres (89 km²) irrigated downstream from station.

AVERAGE DISCHARGE.--48 years, 3,150 ft³/s (89.21 m³/s), 2,282,000 acre-ft/yr (2,810 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,300 ft³/s (915 m³/s) May 28, 1948, gage height, 15.88 ft (4.840 m); minimum, 183 ft³/s (5.18 m³/s) Oct. 14, 1939; minimum gage height, 1.24 ft (0.378 m) Nov. 1, 1952; minimum daily discharge, 270 ft³/s (7.65 m³/s) Oct. 2, 1929, Nov. 30, 1936, Dec. 1, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,200 ft³/s (714 m³/s) Dec. 4, gage height, 13.54 ft (4.127 m); minimum, 668 ft³/s (18.9 m³/s) Oct. 2, 3, gage height, 2.13 ft (0.649 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	680	1530	3250	2420	3270	1560	1570	4720	6210	9600	5580	2450
2	674	1690	9610	2380	3150	1490	1530	6460	5650	8520	5490	2440
3	680	2770	17500	2330	3050	1450	1500	7600	5270	8150	5470	2280
4	766	3680	23600	2310	2900	1390	1570	7970	5150	8330	5350	2120
5	874	3980	19300	2320	2620	1370	1720	7890	4990	8880	5310	2030
6	938	3980	13000	2160	2580	1400	2060	7720	5200	10000	5060	2030
7	938	3580	9440	2110	2600	1380	2250	8200	5770	11400	5630	2000
8	866	3250	7950	2090	2530	1350	2390	9870	6860	12200	5870	1810
9	824	2920	8260	2020	2440	1350	2760	12200	8230	11900	5020	1630
10	869	2600	7700	1970	2320	1420	3020	13600	9650	9940	4600	1490
11	886	2330	6760	2010	2250	1480	3530	13600	9660	8650	4390	1400
12	823	2130	5950	1940	2420	1430	3800	12000	8900	8390	4360	1360
13	774	1980	5310	1830	2440	1420	3860	11300	8060	8050	4180	1320
14	735	2350	4700	1830	2310	1400	3790	11200	7220	7730	3790	1280
15	822	3950	4350	2130	2210	1370	3680	10700	7310	7680	3430	1280
16	1010	4430	3950	3290	2280	1370	3390	10600	8940	8210	3470	1270
17	1090	3800	3610	3650	2260	1380	3210	11200	10400	9300	3180	1290
18	1640	3250	3340	3590	2200	1460	3080	10300	11500	9470	3000	1310
19	1950	2870	3090	3430	2070	1560	2970	9340	12800	8780	2890	1320
20	2440	2660	2940	3220	1970	1560	3150	8460	13100	8540	3150	1350
21	2180	2420	2780	3010	1880	1550	3130	8030	12100	8210	3170	1370
22	1960	2260	2640	2900	1830	1530	3020	8160	11000	7020	2860	1380
23	1720	2250	2530	2770	1790	1510	2920	8790	9790	6400	2710	1360
24	1530	2840	2470	2630	1780	1600	2890	8710	8990	7070	2640	1340
25	1480	4000	2510	2510	1770	1670	2920	8430	8420	7460	2770	1280
26	1450	3720	2610	2390	1730	1630	2820	7930	7410	7090	2980	1240
27	1370	3460	2670	3000	1710	1590	2890	8580	6930	6640	2700	1210
28	1320	3060	2450	4040	1690	1560	3130	9130	7330	5900	2530	1180
29	1390	2650	2450	3800	1630	1520	3440	8400	9000	5680	2510	1160
30	1560	2540	2830	3570	---	1500	3950	7660	10500	5800	2460	1140
31	1620	---	2710	3400	---	1580	---	6890	---	5530	2430	---
TOTAL	37859	88830	192260	83050	65680	45830	85940	285640	252340	256520	118970	46120
MEAN	1221	2961	6202	2679	2265	1478	2865	9214	8411	8275	3838	1537
MAX	2440	4430	23600	4040	3270	1670	3950	13600	13100	12200	5870	2450
MIN	674	1530	2450	1830	1630	1350	1500	4720	4990	5530	2430	1140
AC-FT	75090	176200	381300	164700	130300	90900	170500	566600	500500	508800	236000	91480

CAL YR 1975 TOTAL 1410012 MEAN 3863 MAX 23600 MIN 669 AC-FT 2797000
WTR YR 1976 TOTAL 1559039 MEAN 4260 MAX 23600 MIN 674 AC-FT 3092000

12461001 WENATCHEE RIVER NEAR DRYDEN, WA

LOCATION.--Lat 47°32'07", long 120°32'59", near center of N½ sec.35, T.24 N., R.18 E., Chelan County, Hydrologic Unit 17020011, at U.S. Highway 2 crossing 0.6 mi (1.0 km) southeast of Dryden and at mile 14.9 (24.0 km).

PERIOD OF RECORD.--October 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)
OCT							
21...	0835	2330	45	7.5	8.8	25	3
28...	0830	1390	50	6.9	6.5	25	4
NOV							
11...	0830	2510	57	7.6	4.1	13	3
18...	0830	3540	43	7.4	3.4	17	1
DEC							
09...	0835	8990	39	7.5	4.3	25	5
16...	0850	4370	47	7.3	2.0	17	3
JAN							
06...	0835	1640	53	6.9	.3	17	5
20...	0845	3460	56	7.0	.3	21	3
FEB							
03...	0800	3440	40	6.9	1.6	21	2
24...	0845	1960	72	8.1	3.1	9	3
MAR							
09...	0815	1480	67	7.5	2.9	8	4
23...	0815	1680	86	7.4	3.9	17	2
APR							
13...	0835	4190	72	7.7	6.2	21	7
27...	0825	3010	72	7.6	8.1	21	7
MAY							
11...	0840	14400	45	7.3	6.8	21	8
25...	0815	8840	44	7.3	6.9	17	6
JUN							
08...	0905	6900	40	7.4	10.1	17	7
22...	0820	11600	38	7.4	9.2	8	5
JUL							
13...	0815	8300	33	7.4	10.3	13	8
27...	0835	6840	34	7.3	11.9	13	4
AUG							
10...	0845	4610	37	7.2	13.2	13	2
24...	0755	2510	42	7.4	14.6	8	2
SEP							
14...	0755	1140	55	7.5	12.7	13	1
21...	0755	1220	53	7.5	13.3	17	1

DATE	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
OCT							
21...	11.0	B1000	B10	.06	.06	.02	.00
28...	12.1	B150	B2	.06	.05	.01	.00
NOV							
11...	13.1	B280	<2	.08	.03	.01	.00
18...	13.5	B260	B2	.07	.02	.00	.00
DEC							
09...	12.9	B80	B10	.05	.04	.04	.00
16...	13.5	120	B2	.08	.06	.01	.00
JAN							
06...	14.1	64	B22	.12	.07	.01	.00
20...	14.4	58	<2	.09	.06	.01	.01
FEB							
03...	14.0	B40	<2	.06	.02	.00	.00
24...	13.1	560	B10	.07	.04	.01	.00
MAR							
09...	13.5	200	B22	.04	.02	.01	.00
23...	13.4	260	B4	.07	.05	.01	.00
APR							
13...	12.5	B100	--	.03	.04	.02	.00
27...	11.0	B90	<2	.02	.03	.01	.00
MAY							
11...	12.5	110	<2	.06	.04	.03	.00
25...	12.1	52	8	.06	.02	.02	.00
JUN							
08...	11.2	150	8	.05	.04	.01	.00
22...	11.9	78	<2	.05	.02	.01	.00
JUL							
13...	11.2	150	B14	.05	.04	.01	.00
27...	10.6	110	B2	.05	.07	.01	.00
AUG							
10...	10.6	50	B20	.04	.06	.03	.00
24...	9.6	200	B18	.03	.06	.01	.00
SEP							
14...	10.2	>280	B14	.08	.02	.01	.00
21...	9.8	B130	B4	.05	.02	.01	.00

B Results based upon colony counts outside the ideal range.

12462500 WENATCHEE RIVER AT MONITOR, WA

LOCATION.--Lat 47°29'58", long 120°25'24", in NE¼SW¼ sec.11, T.23 N., R.19 E., Chelan County, Hydrologic Unit 17020011, on right bank 1.0 mi (1.6 km) north of Monitor, 3.5 mi (5.6 km) downstream from Mission Creek, and at mile 7.0 (11.3 km).

DRAINAGE AREA.--1,301 mi² (3,370 km²).

PERIOD OF RECORD.-August to November 1897, October 1962 to current year. Published as "near Wenatchee" 1897.

GAGE.--Water-stage recorder. Altitude of gage is 680 ft (207 m), from topographic map. Aug. 7 to Nov. 7, 1897, nonrecording gage 1 mi (1.6 km) downstream at different datum.

REMARKS.--Records excellent. No regulation. Diversions for irrigation of about 25,000 acres (100 km²) above station.

AVERAGE DISCHARGE.--14 years, 3,540 ft³/s (100.2 m³/s), 2,565,000 acre-ft/yr (3,160 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,200 ft³/s (827 m³/s) Dec. 4, 1975, gage height, 27.14 ft (8.272 m); minimum, 362 ft³/s (10.3 m³/s) Sept. 4, 5, 6, 1973, gage height, 16.98 ft (5.176 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,200 ft³/s (827 m³/s) Dec. 4, gage height, 27.14 ft (8.272 m); minimum, 645 ft³/s (18.3 m³/s) Oct. 2, gage height, 17.35 ft (5.288 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	667	1700	3500	2760	3720	1780	1900	5180	6540	10100	5630	2420
2	652	2200	10800	2690	3600	1720	1850	7060	5920	8930	5560	2430
3	658	3380	20000	2630	3480	1650	1810	8520	5500	8480	5530	2270
4	734	4220	25000	2600	3320	1590	1890	8880	5350	8670	5430	2100
5	859	4400	21000	2590	2990	1560	2100	8780	5160	9240	5380	2000
6	917	4300	17000	2470	2910	1590	2590	8540	5360	10300	5200	1990
7	961	4000	11000	2380	2960	1590	2790	9030	5930	11800	5810	1990
8	875	3800	9020	2340	2890	1560	2900	10800	7100	12700	6210	1810
9	845	3400	9220	2260	2810	1550	3370	13200	8580	12400	5270	1620
10	973	3000	8640	2190	2660	1630	3660	14800	10100	10500	4790	1480
11	986	2700	7590	2240	2570	1720	4230	14700	10200	9110	4520	1380
12	924	2400	6660	2170	2740	1680	4580	13000	9410	8760	4470	1340
13	877	2200	5940	2040	2790	1670	4570	12300	8520	8420	4300	1290
14	843	2600	5260	2050	2660	1650	4440	12200	7610	8050	3930	1260
15	995	3500	4890	2270	2540	1620	4270	11600	7630	7960	3540	1270
16	1110	5000	4430	3570	2610	1610	3910	11500	9300	8470	3580	1250
17	1280	4500	4050	4150	2620	1620	3670	12000	10900	9640	3290	1270
18	1860	3700	3720	4140	2550	1720	3500	11100	12000	9880	3070	1300
19	2220	3400	3440	3950	2400	1840	3360	10100	13400	9180	2960	1310
20	2580	3000	3260	3690	2280	1840	3550	9130	13700	8870	3140	1340
21	2300	2800	3100	3440	2170	1830	3580	8590	12800	8570	3260	1380
22	2040	2600	2940	3310	2100	1800	3430	8690	11700	7310	2940	1380
23	1800	2500	2820	3160	2050	1780	3310	9370	10400	6550	2760	1370
24	1630	3000	2750	2990	2030	1870	3250	9360	9510	7180	2690	1340
25	1630	4400	2780	2850	2030	1960	3290	9010	8910	7680	2780	1280
26	1560	4100	2900	2730	1990	1910	3180	8440	7830	7300	2990	1240
27	1490	3800	3020	3500	1960	1870	3230	9130	7240	6830	2780	1210
28	1470	3500	2780	4580	1940	1840	3460	9750	7600	6030	2580	1180
29	1630	3000	2750	4320	1860	1790	3790	8980	9290	5720	2540	1160
30	1770	2800	3140	4070	---	1770	4350	8160	10900	5870	2480	1140
31	1760	---	3070	3880	---	1870	---	7310	---	5590	2430	---
TOTAL	40896	99900	216470	94010	75230	53480	99810	309210	264390	266090	121840	45800
MEAN	1319	3330	6983	3033	2594	1725	3327	9975	8813	8584	3930	1527
MAX	2580	5000	25000	4580	3720	1960	4580	14800	13700	12700	6210	2430
MIN	652	1700	2750	2040	1860	1550	1810	5180	5160	5590	2430	1140
AC-FT	81120	198200	429400	186500	149200	106100	198000	613300	524400	527800	241700	90840

CAL YR 1975 TOTAL 1523442 MEAN 4174 MAX 25000 MIN 652 AC-FT 3022000
WTR YR 1976 TOTAL 1687126 MEAN 4610 MAX 25000 MIN 652 AC-FT 3346000

12462520. WENATCHEE RIVER AT WENATCHEE, WA

LOCATION.--Lat 47°27'32", long 120°20'07", in SE¼NW¼ sec.28, T.23 N., R.20 E., Chelan County, Hydrologic Unit 17020011, at bridge on U.S. Highway 2, 1.3 mi (2.1 km) north of Wenatchee, and at mile 1.1 (1.8 km).

DRAINAGE AREA.--1,327 mi² (3,437 km²).

PERIOD OF RECORD.--Water years, 1960-63, 1964-66 (partial-record station), 1967-70, 1972, 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-CORALT UNITS)	TUR-BID-ITY (JTU)
OCT							
21...	0800	2340	54	6.9	8.8	29	4
28...	0800	1440	69	6.9	5.7	29	4
NOV							
11...	0805	2700	48	7.5	2.9	13	2
18...	0800	3700	49	7.5	2.7	21	2
DEC							
09...	0810	9270	37	7.5	4.2	29	6
16...	0815	4510	47	7.4	1.6	17	33
JAN							
06...	0805	2500	57	7.1	.0	17	4
20...	0820	3740	57	7.1	.3	21	3
FEB							
03...	0740	3510	40	7.1	1.6	17	2
24...	0810	2030	77	7.0	2.7	13	4
MAR							
09...	0745	1540	89	7.6	2.6	8	4
23...	0745	1790	99	7.7	3.1	13	4
APR							
13...	0810	4590	84	7.7	6.6	21	7
27...	0800	3220	81	7.0	8.3	21	4
MAY							
11...	0810	15000	41	7.6	7.1	21	8
25...	0740	9100	45	7.1	6.8	17	6
JUN							
08...	0830	6930	45	7.5	11.1	13	3
22...	0750	11900	37	7.6	9.8	8	6
JUL							
13...	0740	8540	37	7.3	10.8	13	17
27...	0810	6950	40	7.4	12.4	13	5
AUG							
10...	0810	4820	41	7.2	14.3	8	2
24...	0715	2700	50	7.4	15.0	8	1
SEP							
14...	0720	1260	70	7.5	13.1	13	1
21...	0725	1370	66	7.5	13.2	13	1

DATE	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	FECAL COLI-FORM (COL. PER 100 ML)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)
OCT							
21...	10.9	B800	B20	.07	.05	.02	.00
28...	12.0	B600	B4	.12	.06	.02	.00
NOV							
11...	12.9	B650	B2	.08	.02	.01	.00
18...	13.2	500	B4	.08	.02	.01	.00
DEC							
09...	12.7	B200	<5	.07	.03	.02	.00
16...	13.6	200	B2	.10	.06	.02	.00
JAN							
06...	13.9	120	B10	.12	.03	.01	.00
20...	14.4	B50	B12	.10	.06	.01	.01
FEB							
03...	13.9	B20	B2	.06	.04	.00	.00
24...	13.1	700	50	.30	.05	.02	.00
MAR							
09...	13.1	1400	40	.09	.02	.01	.00
23...	13.0	440	B20	.10	.03	.02	.00
APR							
13...	12.1	B200	15	.03	.04	.03	.00
27...	11.5	220	18	.06	.04	.02	.00
MAY							
11...	12.2	120	12	.06	.04	.14	.00
25...	11.8	48	4	.07	.02	.01	.00
JUN							
08...	11.1	360	B36	.05	.02	.02	.00
22...	11.8	B80	B10	.06	.04	.01	.00
JUL							
13...	11.0	380	B14	.06	.04	.02	.00
27...	10.6	B28	<2	.06	.10	.03	.00
AUG							
10...	10.1	B160	B10	.06	.10	.05	.00
24...	9.5	340	B14	.03	.02	.02	.00
SEP							
14...	9.7	>200	B10	.09	.02	.01	.00
21...	9.4	440	B8	.05	.02	.01	.00

B Results based upon colony counts outside the ideal range.

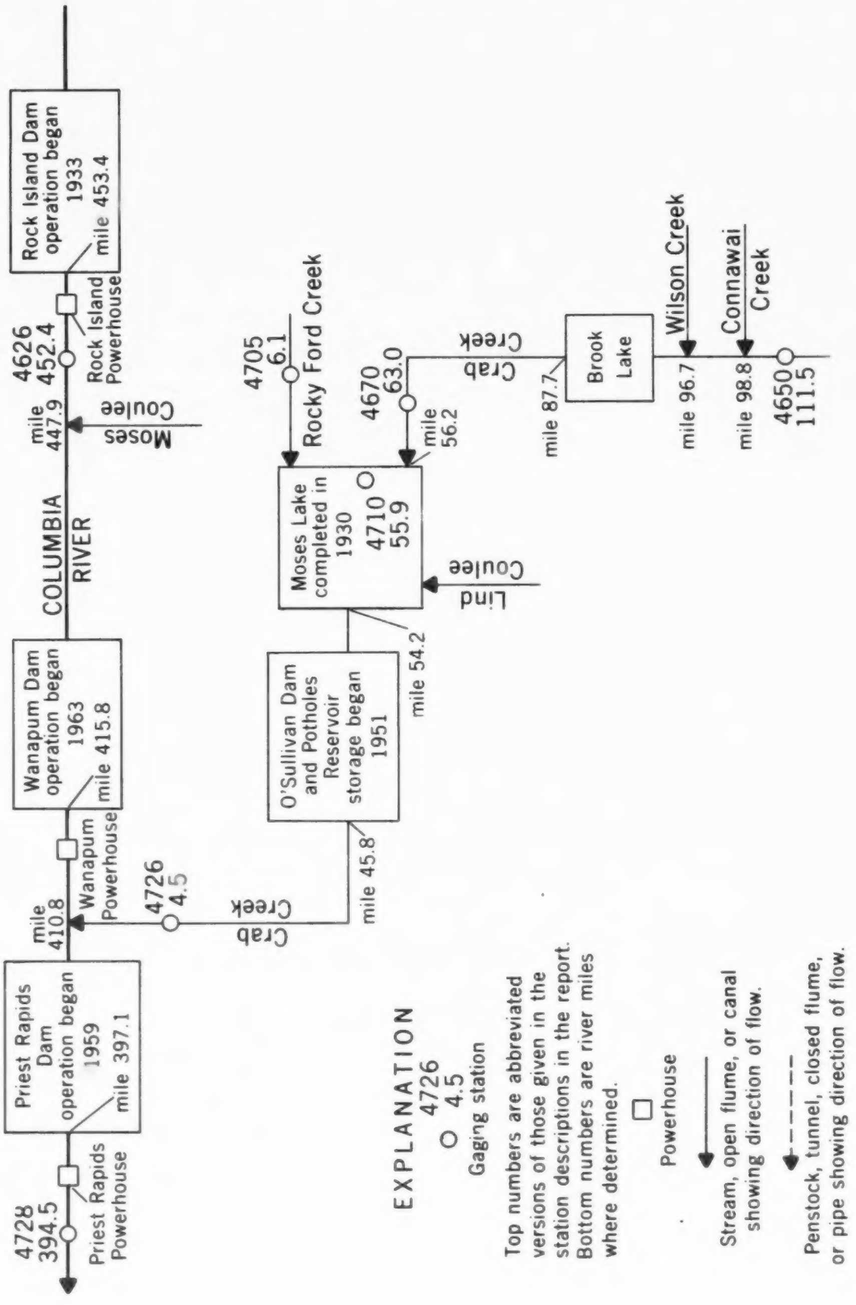
Rock Island Dam operation began 1933 mile 453.4
Rock Island Powerhouse
4626 452.4
mile 447.9
Moses Coulee
COLUMBIA RIVER
Wanapum Dam operation began 1963 mile 415.8
Wanapum Powerhouse
mile 410.8
4726 4.5
Crab Creek
Priest Rapids Dam operation began 1959 mile 397.1
Priest Rapids Powerhouse
4728 394.5
4705 6.1
Rocky Ford Creek
4670 63.0
mile 56.2
Moses Lake completed in 1930
4710 55.9
Lind Coulee
mile 54.2
O'Sullivan Dam and Potholes Reservoir storage began 1951
mile 45.8
Crab Creek
mile 87.7
Brook Lake
Wilson Creek
mile 96.7
Connawai Creek
mile 98.8
4650 111.5
EXPLANATION
4726 4.5
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.

Figure 12. Gaging stations in Columbia River basin from Rock Island Dam to Priest Rapids gage.

12462600 COLUMBIA RIVER BELOW ROCK ISLAND DAM, WA

LOCATION.--Lat 47°19'57", long 120°04'48", in NE¼NW¼ sec.9, T.21 N., R.22 E., Douglas County, Hydrologic Unit 17020010, on left bank 1.0 mi (1.6 km) downstream from Rock Island Dam, 2.0 mi (3.2 km) downstream from Rock Island Creek, 12 mi (19.3 km) southeast of Wenatchee, and at mile 452.4 (727.9 km).

DRAINAGE AREA.--89,400 mi^2 (231,500 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to December 1910 (gage heights only), May 1913 to December 1916, October 1930 to current year. Published as "at Wenatchee" January 1910 to December 1916, and as "at Trinidad" October 1930 to May 1961.

GAGE.- Water-stage recorder. Datum of gage is at mean sea level. Prior to Jan. 1, 1916, nonrecording gage 1.2 mi (1.9 km) upstream from highway bridge at Wenatchee, at mile 466.3 (750.3 km), at datum 583 ft (177.7 m) above mean sea level, unadjusted. Jan. 1 to Dec. 31, 1916, nonrecording gage on pier of highway bridge at Wenatchee, at mile 465.1 (748.3 km), at datum 579.30 ft (176.571 m) above mean sea level, unadjusted. Oct. 1, 1930 to May 31, 1961, water-stage recorder 0.5 mi (0.8 km) southwest of Trinidad, at mile 441.7 (710.7 km), at datum 499.3 ft (152.19 m) above mean sea level (river-profile survey). Since May 21, 1963, auxiliary water-stage recorder 2.0 mi (3.2 km) downstream at same datum.

REMARKS.--Water-discharge records good. Flow regulated by nine major reservoirs and numerous small reservoirs and powerplants. Diversion by Feeder Canal for Columbia Basin project (see sta 12435500) and for irrigation of about 380,000 acres (1,540 km^2) in the United States and an additional 35,000 acres (142 km^2) in Canada.

AVERAGE DISCHARGE.--49 years (water years 1914-16, 1931-76), 122,700 ft^3/s (3,475 m^3/s), 88,900,000 acre-ft/yr (110,000 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 692,600 ft^3/s (19,600 m^3/s) June 12, 1948, gage height, 59.35 ft (18.090 m) site and datum then in use; minimum, 4,120 ft^3/s (117 m^3/s) Feb. 10, 1932, gage height, 11.40 ft (3.475 m^3/s), site and datum then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1894, reached a discharge of about 740,000 ft^3/s (21,000 m^3/s), from floodmarks at Wenatchee.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 264,000 ft^3/s (7,480 m^3/s) July 18; minimum daily, 47,700 ft^3/s (1,350 m^3/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81700	94500	105000	117000	113000	145000	141000	142000	197000	175000	180000	150000
2	80500	79700	87500	113000	130000	160000	141000	139000	177000	168000	203000	145000
3	68200	90800	96200	99000	134000	157000	104000	149000	174000	171000	230000	150000
4	47700	83100	94900	117000	138000	152000	102000	173000	163000	161000	238000	157000
5	57200	93800	108000	126000	137000	153000	122000	165000	158000	175000	243000	148000
6	78200	103000	87200	119000	153000	160000	117000	156000	154000	153000	230000	134000
7	81500	102000	104000	110000	147000	159000	114000	177000	155000	185000	237000	204000
8	80800	101000	127000	111000	140000	158000	109000	202000	142000	168000	208000	186000
9	78900	84100	101000	113000	149000	146000	93700	228000	151000	174000	203000	180000
10	71800	102000	111000	116000	155000	154000	52200	226000	171000	186000	210000	148000
11	68100	97800	133000	110000	154000	142000	96300	223000	180000	160000	224000	123000
12	54100	95900	129000	114000	154000	136000	143000	199000	153000	165000	215000	121000
13	74000	99200	102000	112000	147000	135000	149000	194000	150000	181000	208000	124000
14	91900	87900	93700	101000	114000	142000	175000	195000	151000	192000	151000	116000
15	88600	98300	119000	109000	106000	136000	164000	190000	152000	203000	160000	116000
16	87800	100000	118000	132000	132000	127000	177000	211000	160000	194000	184000	108000
17	74500	120000	134000	102000	143000	135000	190000	203000	161000	231000	205000	108000
18	72700	119000	118000	94400	158000	148000	168000	210000	167000	264000	244000	105000
19	68600	117000	110000	113000	146000	130000	154000	206000	176000	256000	236000	68500
20	87900	117000	118000	133000	139000	126000	155000	197000	184000	243000	216000	93400
21	102000	120000	111000	124000	124000	122000	148000	187000	186000	240000	197000	108000
22	109000	113000	121000	141000	137000	153000	142000	202000	210000	208000	192000	113000
23	95600	93100	120000	127000	161000	136000	142000	206000	201000	207000	181000	102000
24	101000	122000	96400	121000	159000	133000	143000	204000	191000	145000	142000	108000
25	93900	114000	76800	121000	140000	135000	136000	205000	187000	147000	144000	82800
26	80500	120000	101000	127000	152000	153000	148000	206000	170000	161000	144000	73700
27	104000	89700	87500	120000	161000	103000	146000	198000	159000	191000	239000	95000
28	99700	110000	81600	130000	150000	116000	147000	204000	163000	217000	232000	103000
29	85600	108000	118000	139000	152000	134000	145000	211000	171000	209000	199000	105000
30	101000	107000	120000	129000	---	131000	141000	208000	171000	205000	190000	105000
31	105000	---	112000	132000	---	145000	---	188000	---	175000	171000	---
TOTAL	2572000	3082900	3341800	3672400	4124000	4362000	4105200	6004000	5085000	5910000	6256000	3680400
MEAN	82970	102800	107800	118500	142200	140700	136800	193700	169500	190600	201800	122700
MAX	109000	122000	134000	141000	161000	160000	190000	228000	210000	264000	244000	204000
MIN	47700	79700	76800	94400	106000	103000	52200	139000	142000	145000	142000	68500
AC-FT	5102000	6115000	6628000	7284000	8180000	8652000	8143000	11910000	10090000	11720000	12410000	7300000

CAL YR 1975 TOTAL 41690000 MEAN 114200 MAX 208000 MIN 39900 AC-FT 82690000
WTR YR 1976 TOTAL 52195700 MEAN 142600 MAX 264000 MIN 47700 AC-FT 103500000

12462600 COLUMBIA RIVER BELOW ROCK ISLAND DAM, WA--Continued

WATER QUALITY RECORDS

LOCATION.--Samples taken at site 1.6 mi (2.6 km) downstream from gaging station, 2.6 mi (4.2 km) downstream from Rock Island Dam, 13 mi (21 km) southeast of Wenatchee, and at mi 450.9 (725.5 km).

PERIOD OF RECORD.--Water years 1972, 1975 to September 1976 (discontinued).

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT									
20...	1740	82600	150	7.3	15.3	13	5	9.9	B200
27...	1600	97300	150	8.5	14.7	8	5	9.7	B200
NOV									
10...	1515	90300	160	8.1	11.1	8	2	12.8	>120
17...	1550	119000	210	8.4	10.0	13	2	11.8	--
DEC									
08...	1540	132000	200	8.1	7.2	17	3	12.4	>2100
15...	1645	137000	220	7.0	6.0	8	4	12.7	<50
JAN									
05...	1620	158000	160	7.4	3.1	13	5	13.2	70
19...	1600	92600	160	7.8	4.1	17	5	13.8	>80
FEB									
02...	1439	65800	190	7.1	2.8	13	4	14.6	B20
23...	1630	161000	160	7.6	4.5	9	8	15.2	>160
MAR									
08...	1540	158000	150	7.5	3.9	8	6	16.0	<20
22...	1515	184000	180	7.6	6.6	13	5	14.8	2300
APR									
12...	1545	140000	162	8.4	9.9	13	7	13.5	40
26...	1605	262000	165	8.5	9.7	17	8	12.6	70
MAY									
10...	1550	231000	148	8.1	11.4	17	10	12.9	430
24...	1610	222000	134	8.4	12.6	17	7	13.3	90
JUN									
07...	1610	179000	128	8.2	15.1	17	4	12.6	100
21...	1545	189000	116	8.2	14.6	8	8	12.0	B80
JUL									
12...	1530	165000	128	8.1	16.2	13	7	11.0	B42
26...	1620	352000	118	8.1	17.7	13	6	11.3	96
AUG									
09...	1645	220000	135	8.1	18.5	8	3	10.8	>330
23...	1520	280000	132	8.2	20.1	8	4	10.6	--
SEP									
13...	1540	120000	130	9.0	18.5	13	2	11.2	B40
20...	1520	91900	130	8.2	19.2	4	1	10.0	B90

DATE	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT									
20...	B6	84	27	27	4.1	2.8	1.3	70	57
27...	B2	67	11	20	4.1	2.8	1.1	68	56
NOV									
10...	<2	67	9	20	4.2	2.4	1.0	71	58
17...	B2	67	11	19	4.7	3.2	1.0	68	56
DEC									
08...	<2	68	13	20	4.5	2.5	1.1	68	56
15...	<2	66	13	19	4.5	5.1	1.4	64	53
JAN									
05...	<2	74	14	20	5.9	3.3	1.2	74	61
19...	<2	73	11	21	5.0	2.4	1.6	76	62
FEB									
02...	<2	75	9	21	5.4	3.3	1.0	80	66
23...	B4	80	13	22	6.0	5.4	1.6	81	66
MAR									
08...	<2	70	7	21	4.2	2.1	.8	77	63
22...	<5	73	7	21	4.9	2.5	1.2	80	66
APR									
12...	<2	76	8	21	5.7	3.1	1.1	83	68
26...	<2	73	2	21	4.9	3.2	1.1	86	71
MAY									
10...	42	68	8	20	4.4	2.3	1.0	73	60
24...	52	59	6	17	4.0	2.5	.9	65	53
JUN									
07...	<2	59	8	17	4.0	1.9	.9	62	51
21...	<2	49	2	14	3.5	1.8	.8	58	48
JUL									
12...	B14	57	7	17	3.6	1.8	1.0	61	50
26...	B8	60	6	18	3.7	3.5	2.0	66	54
AUG									
09...	78	62	--	18	4.2	5.2	1.3	--	--
23...	B3	61	9	18	3.9	3.1	1.0	63	52
SEP									
13...	B2	55	5	16	3.7	3.1	1.0	61	50
20...	<2	56	6	16	3.8	3.4	.9	61	50

B Results based upon colony counts outside the ideal range.

12462600 COLUMBIA RIVER BELOW ROCK ISLAND DAM, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)
OCT									
20...	5.6	11	.9	.15	.07	.21	.28	.04	.02
27...	.3	13	1.9	.09	.06	.19	.25	.03	.00
NOV									
10...	.9	11	1.6	2.3	.08	.44	.52	.74	.00
17...	.4	13	1.9	.06	.03	.22	.25	.03	.01
DEC									
08...	.9	11	1.8	.09	.05	.09	.14	.03	.01
15...	10	17	1.4	.22	.11	.23	.34	.03	.02
JAN									
05...	4.7	17	1.7	.15	.08	.23	.31	.02	.01
19...	1.9	13	2.4	.16	.07	.24	.31	.03	.02
FEB									
02...	10	16	2.2	.30	.03	.11	.14	.06	.01
23...	3.3	16	1.5	.16	.04	.18	.22	.05	.03
MAR									
08...	3.9	14	1.0	.17	.04	.10	.14	.04	.01
22...	3.2	15	2.5	.15	.04	.21	.25	.05	.01
APR									
12...	.5	18	2.4	.14	.02	.18	.20	.06	.01
26...	.4	17	2.5	.12	.04	.22	.26	.05	.01
MAY									
10...	.9	16	2.2	.01	.04	.18	.22	.05	.00
24...	.4	13	2.1	.02	.02	.20	.22	.05	.00
JUN									
07...	.6	11	1.5	.02	.08	.14	.22	.03	.00
21...	.6	8.5	1.5	.04	.04	.18	.22	.03	.00
JUL									
12...	.8	9.9	2.1	.01	.06	.20	.26	.04	.00
26...	.8	12	3.2	.06	.07	.50	.57	.03	.01
AUG									
09...	--	12	1.9	.05	.06	.34	.40	.03	.01
23...	.6	9.5	1.2	.03	.02	.18	.20	.02	.01
SEP									
13...	.1	8.5	.8	.04	.02	.12	.14	.01	.01
20...	.6	8.4	.3	.03	.02	.11	.13	.03	.00

12464670 CLEAR LAKE NEAR MEDICAL LAKE, WA

LOCATION.--Lat 47°32'30", long 117°41'21", in NW¼SW¼ sec.30, T.24 N., R.41 E., Spokane County, Hydrologic Unit 17020013, on north shore 2.2 mi (3.5 km) south of town of Medical Lake.

DRAINAGE AREA.--9.51 mi^2 (24.63 km^2), including that of West Medical Lake.

PERIOD OF RECORD.--September 1958 to current year (fragmentary), chemical analyses April 1973 to October 1973.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 2,298.6 ft (700.61 m) above mean sea level (unadjusted).

REMARKS.--No known regulation. Some pumping for domestic use and irrigation. Gage heights to top of ice Dec. 23 to Feb. 13 and Mar. 5-12.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 44.50 ft (13.564 m) Apr. 2, 1974; minimum observed, 38.74 ft (11.808 m) Oct. 8, 11, 18, 1968, Oct. 16, 19, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 44.18 ft (13.466 m) Apr. 2, 6, 13, 16; minimum observed, 42.03 ft (12.811 m) Sept. 28.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	43.67	---	---	---
2	---	---	42.38	42.70	---	43.90	44.18	---	---	43.25	---	---
3	42.18	---	---	---	43.10	---	---	44.04	---	---	42.72	42.40
4	---	42.24	---	---	---	---	---	44.02	43.67	---	---	---
5	---	---	42.44	---	---	43.94	---	---	---	---	---	---
6	---	---	---	42.80	43.20	---	44.18	---	---	43.21	42.66	---
7	42.22	42.26	---	---	---	---	---	43.98	---	---	---	42.26
8	---	---	---	---	---	---	---	---	43.63	---	---	---
9	---	---	42.52	42.84	---	43.94	44.16	---	---	43.21	---	---
10	42.22	---	---	---	43.30	---	---	---	---	---	42.58	42.24
11	---	42.22	---	---	---	---	---	43.98	43.61	---	---	---
12	---	---	42.52	---	---	43.96	---	---	---	---	---	---
13	---	---	---	---	43.20	---	44.18	---	---	43.11	42.54	---
14	42.22	42.26	---	42.90	---	---	---	43.90	---	---	---	42.16
15	---	---	---	---	---	43.96	---	---	43.53	---	---	---
16	---	---	42.54	42.94	---	---	44.18	---	---	43.04	---	---
17	42.22	---	---	---	43.46	43.98	---	---	---	---	42.48	42.14
18	---	42.26	---	---	---	---	---	---	43.53	---	---	---
19	---	---	42.54	---	---	---	---	---	---	---	---	---
20	---	---	---	43.08	43.54	---	44.16	43.80	---	42.98	42.46	---
21	42.20	42.24	---	---	---	---	---	43.80	---	---	---	42.06
22	---	---	---	---	---	---	---	---	43.47	---	---	42.08
23	---	---	42.54	43.09	---	---	44.16	---	---	42.92	---	---
24	42.18	---	---	---	43.62	---	---	---	---	---	42.44	42.06
25	---	42.28	---	---	---	---	---	43.82	43.41	---	---	---
26	---	---	42.54	---	---	44.12	---	---	---	---	---	---
27	---	---	---	43.10	43.80	---	44.08	---	---	42.84	42.44	---
28	42.26	42.30	---	---	---	---	---	43.71	---	---	---	42.03
29	42.24	---	---	---	---	---	---	---	43.33	---	---	---
30	---	---	42.64	43.10	---	44.12	44.02	---	---	42.74	---	---
31	42.24	---	---	---	---	---	---	---	---	---	42.42	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

12465000 CRAB CREEK AT IRBY, WA

LOCATION.--Lat 47°21'38", long 118°50'56", in NW¼NW¼ sec.31, T.22 N., R.32 E., Lincoln County, Hydrologic Unit 17020013, on right bank 8 ft (2.4 m) upstream from highway bridge at Irby, 5.4 mi (8.7 km) downstream from Lake Creek, 7.5 mi (12.1 km) west of Odessa, and at mile 111.5 (179.4 km).

DRAINAGE AREA.--1,042 mi² (2,699 km²).

PERIOD OF RECORD.--September 1942 to current year. Chemical analyses October 1961 to September 1962.

REVISED RECORDS.--WSP 1446: 1949-51. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,386.30 ft (422.544 m) above mean sea level.

REMARKS.--Records good. No regulation. Some diversion for irrigation above station.

AVERAGE DISCHARGE.--34 years, 78.8 ft³/s (2.232 m³/s), 57,090 acre-ft/yr (70.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,370 ft³/s (237 m³/s) Feb. 27, 1957, gage height, 11.94 ft (3.639 m); no flow Jan. 3, 8, 9, 15-22, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.5 m³/s) and maximum(*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 27	0030	516	14.6	3.79	1.155
Jan. 18	0730	682	19.3	4.08	1.244
Jan. 30	0230	407	11.5	3.58	1.091
Feb. 17	1430	*2,270	64.3	*7.31	2.228
Feb. 27	1445	475	13.5	3.70	1.128

Minimum discharge, 5.9 ft³/s (0.17 m³/s) Sept. 4, gage height, 1.33 ft (0.405 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	13	14	195	265	330	167	79	29	23	12	8.6
2	16	13	15	167	236	293	167	78	29	24	12	8.6
3	16	13	15	154	209	249	165	76	29	23	10	8.6
4	16	13	15	139	147	227	154	67	29	22	10	6.4
5	16	13	15	130	97	212	154	55	30	25	6.4	6.9
6	16	13	16	118	115	200	147	59	30	25	8.6	8.0
7	16	13	16	112	112	195	142	55	30	25	12	8.6
8	15	13	17	110	116	186	132	48	31	24	12	9.2
9	15	13	17	103	123	178	121	39	30	25	15	10
10	15	13	18	99	118	170	118	37	30	24	14	9.2
11	15	13	18	95	116	159	110	40	30	24	13	8.6
12	15	13	18	93	112	159	103	37	30	24	10	8.6
13	14	13	19	87	139	154	101	40	30	23	10	8.6
14	14	13	19	87	218	149	99	39	31	21	12	8.6
15	14	13	20	89	391	144	97	35	32	21	12	8.6
16	14	13	20	127	682	139	101	39	33	22	10	8.6
17	14	13	20	455	1930	135	101	36	32	22	8.6	8.0
18	12	13	20	624	1210	130	99	37	31	20	8.6	8.0
19	13	13	21	576	765	125	97	36	30	21	10	8.6
20	13	13	22	407	552	127	93	34	31	20	10	8.6
21	14	13	22	315	411	132	91	32	31	20	9.4	8.6
22	13	14	22	262	333	132	91	31	31	19	9.0	8.6
23	14	14	23	221	282	125	91	32	30	19	8.6	8.0
24	14	14	24	192	249	127	89	33	26	19	8.6	7.4
25	15	14	23	170	246	139	89	27	27	17	11	7.4
26	14	14	85	152	356	172	91	25	26	15	11	8.0
27	14	14	249	142	460	183	97	27	25	15	9.8	8.6
28	14	14	387	149	415	186	95	29	25	15	9.2	8.6
29	14	14	322	243	379	181	83	30	23	15	8.6	8.0
30	14	14	262	293	---	178	83	30	25	15	8.6	8.0
31	13	---	224	286	---	170	---	29	---	12	8.6	---
TOTAL	449	399	1998	6392	10784	5386	3368	1291	876	639	318.6	250.1
MEAN	14.5	13.3	64.5	206	372	174	112	41.6	29.2	20.6	10.3	8.34
MAX	17	14	387	624	1930	330	167	79	33	25	15	10
MIN	12	13	14	87	97	125	83	25	23	12	6.4	6.4
AC-FT	891	791	3960	12680	21390	10680	6680	2560	1740	1270	632	496

CAL YR 1975 TOTAL 35535.0 MEAN 97.4 MAX 654 MIN 12 AC-FT 70480
WTR YR 1976 TOTAL 32150.7 MEAN 87.8 MAX 1930 MIN 6.4 AC-FT 63770

12467000 CRAB CREEK NEAR MOSES LAKE, WA

LOCATION.--Lat 47°11'22", long 119°15'53", in NW¼NE¼ sec.35, T.20 N., R.28 E., Grant County, Hydrologic Unit 17020015, on left bank at downstream side of highway bridge, 3 mi (4.8 km) upstream from Parker Horn, 4 mi (6.4 km) north of town of Moses Lake, and at mile 63.0 (101.4 km).

DRAINAGE AREA.--2,228 mi² (5,771 km²), of which 219 mi² (567 km²) in the vicinity of Long Lake Reservoir is noncontributing.

PERIOD OF RECORD.--September 1942 to current year, chemical analyses October 1961 to September 1962.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,070.39 ft (326.255 m) above mean sea level (Bureau of Reclamation bench mark). Prior to July 14, 1956, at site 300 ft (91 m) upstream at same datum.

REMARKS.--Records excellent. Numerous small diversions for irrigation and domestic use above station. Most of natural flow from upper basin passes this station underground. No known regulation. Since 1952, return flow from irrigation on Columbia Basin project has increased runoff during summer months.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft³/s (295 m³/s), Feb. 28, 1957, gage height, 6.81 ft (2.076 m); no flow for several months each year prior to 1952, and part of each day Jan. 14, 15, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 800 ft³/s (22.7 m³/s) Feb. 21, 22, gage height, 4.24 ft (1.292 m); minimum daily, 25 ft³/s (0.71 m³/s) Jan. 5, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	76	43	30	176	398	171	81	59	64	91	91
2	94	73	47	28	188	392	168	80	59	65	92	90
3	98	72	48	27	170	375	165	80	58	66	91	90
4	98	70	44	26	160	350	165	77	58	68	92	90
5	95	68	42	25	150	330	162	76	58	68	91	90
6	95	68	40	26	160	315	160	78	57	69	91	91
7	97	68	40	27	175	300	153	77	56	70	90	90
8	95	65	41	27	182	284	151	76	58	70	91	88
9	95	64	40	28	162	268	146	72	59	71	93	89
10	98	63	39	40	146	253	142	70	57	72	92	90
11	98	60	38	94	134	245	136	69	56	74	90	92
12	97	59	37	118	132	234	132	66	56	75	89	94
13	95	59	35	112	126	238	128	65	57	76	90	94
14	95	58	32	100	121	234	121	62	57	76	91	95
15	95	57	30	99	128	223	116	58	59	77	93	95
16	95	55	29	95	151	213	108	56	61	79	92	94
17	97	53	29	91	165	204	105	54	62	79	93	95
18	95	52	29	86	191	194	102	54	61	80	93	94
19	94	51	28	79	301	185	95	54	62	81	95	90
20	91	50	29	78	606	168	95	53	62	82	97	89
21	98	50	30	95	789	162	88	53	62	83	93	88
22	93	49	31	143	769	165	86	54	62	83	92	88
23	90	49	32	213	718	160	88	52	60	83	94	89
24	88	49	33	268	642	165	90	54	60	84	92	89
25	96	48	33	280	571	157	86	54	60	84	101	89
26	92	48	37	284	522	148	84	55	59	84	97	89
27	87	47	37	272	477	146	79	55	59	84	93	89
28	84	45	34	245	435	155	79	56	60	85	92	89
29	83	40	33	217	410	155	81	56	62	88	92	90
30	81	43	33	191	---	155	80	59	63	89	91	89
31	77	---	32	176	---	165	---	59	---	88	90	---
TOTAL	2880	1709	1105	3620	9057	7136	3562	1965	1779	2397	2864	2720
MEAN	92.9	57.0	35.6	117	312	230	119	63.4	59.3	77.3	92.4	90.7
MAX	98	76	48	284	789	398	171	81	63	89	101	95
MIN	77	40	28	25	121	146	79	52	56	64	89	88
AC-FT	5710	3390	2190	7180	17960	14150	7070	3900	3530	4750	5680	5400

CAL YR 1975 TOTAL 38401 MEAN 105 MAX 306 MIN 19 AC-FT 76170
WTR YR 1976 TOTAL 40794 MEAN 111 MAX 789 MIN 25 AC-FT 80910

12469500 LENORE LAKE NEAR SOAP LAKE, WA

LOCATION.--Lat 47°30'52", long 119°30'06", in SE¼SW¼ sec.1, T.23 N., R.26 E., Grant County, Hydrologic Unit 17020014, on east shore 200 ft (61 m) downlake from outlet gate on Alkali Lake and 8.8 mi (14.2 km) north of town of Soap Lake.

DRAINAGE AREA.--367 mi² (951 km²), of which 281 mi² (728 km²) in the vicinity of Banks Lake is noncontributing.

PERIOD OF RECORD.--July 1936, March 1938 to December 1956 (fragmentary), January 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Dec. 20, 1956, nonrecording gages 800 ft (244 m) uplake at same datum.

REMARKS.--Some diversion from tributaries for irrigation, and pumping into and out of lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,087.73 ft (331.540 m) June 12, 1953; minimum, 1,072.72 ft (326.965 m) Jan. 2, 1959 (affected by wind).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 1,092.2 ft (332.90 m), from well-defined alkali line at gage, date unknown.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,083.02 ft (330.104 m) Mar. 31; minimum, 1,078.00 ft (328.574 m). Sept. 29.

CORRECTION.--The metric conversion for the minimum elevation for tne 1975 water year is 328.986 m, the previously published figure was in error.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080.35	1079.68	1080.01	1080.71	1081.52	1082.24	1082.98	1082.66	1082.01	1081.42	1080.38	1079.29
2	1080.34	1079.67	1080.03	1080.73	1081.54	1082.26	1082.99	1082.64	1081.99	1081.39	1080.35	1079.25
3	1080.33	1079.65	1080.09	1080.75	1081.57	1082.27	1082.99	1082.63	1081.94	1081.35	1080.[illegible]	1079.21
4	1080.30	1079.63	1080.08	1080.78	1081.59	1082.27	1082.98	1082.62	1081.91	1081.32	1080.27	1079.17
5	1080.25	1079.62	1080.07	1080.80	1081.61	1082.31	1082.96	1082.60	1081.88	1081.27	1080.23	1079.15
6	1080.22	1079.64	1080.09	1080.83	1081.63	1082.33	1082.95	1082.58	1081.84	1081.26	1080.18	---
7	1080.20	1079.66	1080.12	1080.86	1081.65	1082.36	1082.93	1082.57	1081.81	---	1080.18	---
8	1080.16	1079.66	1080.14	1080.90	1081.68	1082.39	1082.93	1082.55	1081.80	---	1080.16	---
9	1080.13	1079.67	1080.15	1080.93	1081.70	1082.41	1082.93	1082.53	1081.82	---	1080.12	1078.98
10	1080.11	1079.67	1080.16	1080.95	1081.78	1082.44	1082.90	1082.52	1081.81	---	1080.07	1078.96
11	1080.07	1079.69	1080.15	1080.98	1081.74	1082.45	1082.89	1082.50	1081.81	---	1080.05	1078.93
12	1080.04	1079.70	1080.19	1080.99	1081.79	1082.48	1082.87	1082.47	1081.80	---	1080.01	1078.89
13	1080.02	1079.71	1080.25	1081.01	1081.81	1082.50	1082.87	1082.45	1081.79	---	1079.98	1078.86
14	1079.98	1079.74	1080.27	1081.06	1081.83	1082.52	1082.86	1082.42	1081.79	---	1079.94	1078.83
15	1079.96	1079.77	1080.30	1081.09	1081.85	1082.54	1082.85	1082.42	1081.80	---	1079.90	1078.77
16	1079.93	1079.78	1080.32	1081.12	1081.88	1082.56	1082.86	1082.43	1081.81	1080.86	1079.86	1078.74
17	1079.91	1079.79	1080.34	1081.15	1081.92	1082.59	1082.84	1082.42	1081.81	1080.82	1079.81	1078.72
18	1079.90	1079.80	1080.36	1081.16	1081.94	1082.62	1082.82	1082.39	1081.83	1080.76	1079.77	1078.70
19	1079.87	1079.81	1080.38	1081.19	1081.95	1082.63	1082.80	1082.34	1081.84	1080.72	1079.73	1078.67
20	1079.84	1079.83	1080.40	1081.22	1081.97	1082.65	1082.80	1082.35	1081.81	1080.69	1079.68	1078.64
21	1079.84	1079.84	1080.42	1081.25	1081.99	1082.68	1082.80	1082.33	1081.81	1080.64	1079.64	1078.61
22	1079.82	1079.86	1080.45	1081.27	1082.01	1082.71	1082.82	1082.31	1081.79	1080.59	1079.60	1078.59
23	1079.79	1079.88	1080.48	1081.30	1082.04	1082.73	1082.83	1082.28	1081.74	1080.56	1079.57	1078.56
24	1079.77	1079.89	1080.51	1081.33	1082.07	1082.81	1082.81	1082.25	1081.70	1080.54	1079.53	1078.53
25	1079.79	1079.91	1080.54	1081.35	1082.07	1082.80	1082.78	1082.22	1081.65	1080.54	1079.54	1078.50
26	1079.78	1079.93	1080.58	1081.39	1082.13	1082.82	1082.72	1082.17	1081.60	1080.52	1079.50	1078.47
27	1079.76	1079.94	1080.60	1081.42	1082.17	1082.84	1082.72	1082.1[illegible]	1081.57	1080.50	1079.46	1078.44
28	1079.74	1079.94	1080.62	1081.42	1082.18	1082.85	1082.70	1082.1[illegible]	1081.53	1080.51	1079.42	1078.42
29	1079.72	1079.96	1080.65	1081.45	1082.22	1082.87	1082.69	1082.11	1081.50	1080.50	1079.39	1078.36
30	1079.71	1079.99	1080.67	1081.47	---	1082.88	1082.67	1082.09	1081.46	1080.47	1079.36	1078.36
31	1079.70	---	1080.69	1081.50	---	1082.93	---	1082.05	---	1080.43	1079.33	---
MEAN	1079.98	1079.78	1080.33	1081.11	1081.86	1082.57	1082.85	1082.39	1081.78	---	1079.85	---
MAX	1080.35	1079.99	1080.69	1081.50	1082.22	1082.93	1082.99	1082.66	1082.01	---	1080.38	---
MIN	1079.70	1079.62	1080.01	1080.71	1081.52	1082.24	1082.67	1082.05	1081.46	---	1079.33	---

CAL YR 1975 MEAN 1081.73 MAX 1083.65 MIN 1079.62

12470000 SOAP LAKE NEAR SOAP LAKE, WA

LOCATION.--Lat 47°24'11", long 119°29'11", in NW¼SW¼ sec.18, T.22 N., R.27 E., Grant County, Hydrologic Unit 17020014, on east shore 0.9 mi (1.4 km) north of town of Soap Lake.

DRAINAGE AREA.--413 mi² (1,070 km²), of which 281 mi² (728 km²) in the vicinity of Banks Lake is noncontributing.

PERIOD OF RECORD.-May to August 1936, March 1938 to February 1957 (fragmentary), March 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Feb. 4, 1953, nonrecording gage at site 0.2 mi (0.3 km) uplake. Feb. 4, 1953, to June 8, 1954, nonrecording gage at site 1.5 mi (2.4 km) uplake and June 9, 1954, to June 21, 1957, water-stage recorder at site 0.2 mi (0.3 km) uplake.

REMARKS.--Some diversion from tributaries for irrigation. Water pumped from lake to reduce or limit high stages.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,079.20 ft (328.940 m) Jan. 28, 1953; minimum observed, 1,070.87 ft (326.401 m) Oct. 21, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 1,083.1 ft (330.13 m), from well-defined alkali line at gage, date unknown.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,075.26 ft (327.739 m) Mar. 31, Apr. 1, 10, 15; minimum, 1,073.84 ft (327.306 m) Sept. 12, 16, 19, 20, 21.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1074.19	1074.37	1074.58	1074.83	1075.02	1075.16	1075.23	1075.14	1074.93	1074.57	1074.24	1074.05
2	1074.18	1074.38	1074.58	1074.83	1075.03	1075.16	1075.23	1075.14	1074.92	1074.55	1074.23	1074.02
3	1074.20	1074.39	1074.59	1074.84	1075.03	1075.16	1075.23	1075.13	1074.91	1074.55	1074.23	1074.00
4	1074.20	1074.40	1074.61	1074.85	1075.03	1075.15	1075.23	1075.13	1074.90	1074.55	1074.23	1074.00
5	1074.20	1074.41	1074.61	1074.86	1075.03	1075.15	1075.23	1075.13	1074.89	1074.54	1074.22	1073.99
6	1074.20	1074.42	1074.62	1074.86	1075.03	1075.15	1075.23	1075.14	1074.88	1074.54	1074.22	1073.96
7	1074.20	1074.43	1074.62	1074.87	1075.03	1075.15	1075.23	1075.15	1074.87	1074.54	1074.22	1073.91
8	1074.20	1074.44	1074.63	1074.89	1075.03	1075.15	1075.23	1075.15	1074.87	1074.54	1074.21	1073.91
9	1074.20	1074.44	1074.64	1074.90	1075.04	1075.16	1075.23	1075.14	1074.87	1074.52	1074.20	1073.91
10	1074.21	1074.44	1074.65	1074.90	1075.04	1075.16	1075.23	1075.14	1074.87	1074.51	1074.19	1073.90
11	1074.21	1074.44	1074.65	1074.90	1075.04	1075.16	1075.23	1075.13	1074.84	1074.50	1074.18	1073.90
12	1074.21	1074.45	1074.65	1074.91	1075.05	1075.15	1075.23	1075.12	1074.83	1074.49	1074.17	1073.88
13	1074.21	1074.46	1074.69	1074.91	1075.06	1075.16	1075.23	1075.12	1074.80	1074.46	1074.17	1073.88
14	1074.21	1074.47	1074.71	1074.94	1075.07	1075.16	1075.24	1075.10	1074.78	1074.44	1074.15	1073.88
15	1074.21	1074.48	1074.71	1074.95	1075.07	1075.16	1075.23	1075.09	1074.78	1074.44	1074.15	1073.87
16	1074.21	1074.49	1074.71	1074.95	1075.08	1075.16	1075.23	1075.08	1074.78	1074.43	1074.13	1073.86
17	1074.22	1074.49	1074.71	1074.96	1075.08	1075.17	1075.22	1075.06	1074.78	1074.41	1074.11	1073.86
18	1074.23	1074.50	1074.72	1074.97	1075.08	1075.17	1075.21	1075.05	1074.77	1074.39	1074.11	1073.86
19	1074.24	1074.50	1074.72	1074.97	1075.09	1075.17	1075.20	1075.04	1074.77	1074.39	1074.10	1073.86
20	1074.23	1074.50	1074.73	1074.98	1075.09	1075.16	1075.21	1075.03	1074.74	1074.38	1074.09	1073.86
21	1074.27	1074.51	1074.73	1074.98	1075.10	1075.17	1075.20	1075.03	1074.73	1074.36	1074.07	1073.86
22	1074.28	1074.51	1074.74	1074.98	1075.10	1075.17	1075.20	1075.02	1074.72	1074.35	1074.07	1073.86
23	1074.27	1074.52	1074.76	1074.98	1075.10	1075.17	1075.20	1075.02	1074.68	1074.34	1074.06	1073.86
24	1074.28	1074.53	1074.78	1074.99	1075.10	1075.20	1075.20	1075.00	1074.66	1074.33	1074.05	1073.87
25	1074.31	1074.54	1074.78	1074.99	1075.11	1075.20	1075.19	1074.95	1075.00	1074.31	1074.09	1073.87
26	1074.33	1074.54	1074.80	1075.00	1075.13	1075.20	1075.17	1074.94	1074.98	1074.30	1074.07	1073.87
27	1074.34	1074.55	1074.80	1075.00	1075.15	1075.20	1075.15	1074.98	1074.60	1074.27	1074.05	1073.87
28	1074.34	1074.55	1074.81	1075.00	1075.16	1075.20	1075.14	1074.97	1074.60	1074.26	1074.05	1073.87
29	1074.35	1074.54	1074.82	1075.01	1075.16	1075.19	1075.14	1074.95	1074.59	1074.24	1074.05	1073.87
30	1074.37	1074.57	1074.83	1075.01	---	1075.20	1075.14	1074.95	1074.58	1074.25	1074.05	1073.87
31	1074.37	---	1074.83	1075.02	---	1075.22	---	1074.94	---	1074.25	1074.05	---
MEAN	1074.25	1074.48	1074.70	1074.94	1075.07	1075.17	1075.21	1075.06	1074.80	1074.42	1074.14	1073.90
MAX	1074.37	1074.57	1074.83	1075.02	1075.16	1075.22	1075.24	1075.15	1075.00	1074.57	1074.24	1074.05
MIN	1074.18	1074.37	1074.58	1074.83	1075.02	1075.15	1075.14	1074.94	1074.58	1074.24	1074.05	1073.86

CAL YR 1975 MEAN 1074.91 MAX 1075.56 MIN 1074.18
WTR YR 1976 MEAN 1074.68 MAX 1075.24 MIN 1073.86

12470500 ROCKY FORD CREEK NEAR EPHRATA, WA

LOCATION.--Lat 47°18'36", long 119°26'39", in NW¼NW¼ sec.21, T.21 N., R.27 E., Grant County, Hydrologic Unit 17020015, on right bank 1.6 mi (2.6 km) downstream from source at Rocky Ford Springs, 5.0 mi (8.0 km) east of Ephrata, and 6.1 mi (9.8 km) upstream from mouth at Moses Lake.

DRAINAGE AREA.--458 mi² (1,186 km²), of which 446 mi² (1,155 km²) in vicinity of Banks and Soap Lakes is noncontributing.

PERIOD OF RECORD.--June 1909 to April 1910, July to December 1911, August 1942 to current year. Prior to January 1910, published as Upper Crab Creek near Ephrata.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,064.88 ft (324.575 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Jan. 1, 1912, nonrecording gages at sites 4.5 (7.2 km) to 5.5 mi (8.8 km) downstream at different datums. Aug. 19, 1942, to May 23, 1945, water-stage recorder at site 3.5 mi (5.6 km) downstream at datum 5.37 ft (1.637 m) lower.

REMARKS.--Records excellent except those for period of no gage-height record, Jan. 15 to Feb. 12, which are good. Slight regulation by fish hatchery 1.5 mi (2.4 km) upstream.

AVERAGE DISCHARGE.--34 years (water years 1943-76), 79.8 ft³/s (2.260 m³/s), 57,820 acre-ft/yr (71.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 212 ft³/s (6.00 m³/s) Apr. 15-18, 1956, gage height, 3.58 ft (1.091 m); minimum observed, 20 ft³/s (0.57 m³/s) Aug. 13-18, 1911.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 110 ft³/s (3.12 m³/s) Oct. 30, gage height, 2.67 ft (0.814 m); minimum, 66 ft³/s (1.87 m³/s) Feb. 24, Apr. 4, gage height, 2.16 ft (0.658 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	100	89	78	71	70	75	80	89	94	98	100
2	105	99	88	77	71	70	75	81	89	94	99	100
3	105	99	88	77	71	71	75	81	89	94	99	100
4	106	99	88	77	71	71	74	81	89	95	99	99
5	106	99	87	76	71	71	75	81	90	95	99	99
6	105	99	86	76	71	71	75	81	88	95	100	99
7	105	98	86	75	71	72	75	81	91	95	101	99
8	105	98	85	75	71	72	74	82	91	96	100	99
9	105	97	84	75	71	72	74	82	91	95	100	99
10	105	97	83	75	70	73	75	82	91	96	100	98
11	105	96	83	75	70	73	75	82	92	96	100	98
12	104	96	83	75	70	73	75	82	92	96	100	98
13	104	95	83	75	70	73	76	83	92	96	100	98
14	104	95	82	75	70	73	76	83	93	96	100	98
15	104	95	82	74	70	73	76	83	93	96	100	97
16	104	94	82	74	69	73	76	83	93	96	100	97
17	104	93	81	74	69	73	77	84	93	96	100	97
18	104	93	81	74	69	73	77	84	93	96	100	97
19	104	93	81	74	69	73	77	85	93	96	100	96
20	104	92	80	73	69	74	78	85	93	96	100	96
21	104	92	80	73	69	74	78	85	94	96	100	96
22	103	92	80	73	69	74	78	85	93	96	100	96
23	103	91	80	73	69	74	78	86	93	96	100	96
24	102	90	80	73	69	74	78	86	94	97	100	96
25	103	90	79	72	69	75	78	87	94	97	101	96
26	102	90	79	72	70	74	79	87	94	97	100	96
27	101	90	79	72	70	74	79	87	94	97	100	95
28	101	89	79	72	70	74	79	87	94	98	100	95
29	100	89	78	72	70	75	80	88	94	98	100	95
30	102	89	78	72	---	75	80	88	95	98	100	95
31	100	---	77	72	---	76	---	88	---	98	101	---
TOTAL	3215	2829	2551	2300	2029	2263	2297	2600	2764	2977	3097	2920
MEAN	104	94.3	82.3	74.2	70.0	73.0	76.6	83.9	92.1	96.0	99.9	97.3
MAX	106	100	89	78	71	76	80	88	95	98	101	100
MIN	100	89	77	72	69	70	74	80	88	94	98	95
AC-FT	6380	5610	5060	4560	4020	4490	4560	5160	5480	5900	6140	5790

CAL YR 1975 TOTAL 30128 MEAN 82.5 MAX 107 MIN 58 AC-FT 59760
WTR YR 1976 TOTAL 31842 MEAN 87.0 MAX 106 MIN 69 AC-FT 63160

12471000 MOSES LAKE AT MOSES LAKE, WA

LOCATION.--Lat 47°06'11", long 119°19'02", in SW¼SW¼ sec.28, T.19 N., R.28 E., Grant County, Hydrologic Unit 17020015, on east shore 35 ft (11 m) north of U.S. Highway 10 and Interstate 90, 1.7 mi (2.7 km) upstream from outlet, 2.7 mi (4.3 km) southwest of town of Moses Lake, and at mile 55.9 (89.9 km).

DRAINAGE AREA.--3,080 mi² (7,977 km²), of which 665 mi² (1,722 km²) is noncontributing.

PERIOD OF RECORD.--June 1909 to September 1914 and November 1936 to September 1945 (fragmentary), October 1945 to current year. Published as "at Neppel" 1912-14.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Apr. 3, 1910, nonrecording gage at site 0.6 mi (1.0 km) northeast at different datum. Apr. 3, 1910, to Sept. 30, 1914, and Nov. 19, 1936, to Nov. 24, 1944, nonrecording gages at site 2.8 mi (4.5 km) northeast at Parker Horn at various datums. Oct. 30, 1945, to Mar. 14, 1955, water-stage recorder at site near west shore on downstream side of bridge on U.S. Highway 10 at present datum.

REMARKS.--Elevation controlled between 1,046 (318.8 m) and 1,048 ft (319.4 m) by two outlet structures at south end of lake. Many small diversions for irrigation.

EXTREMES FOR PERIOD OF RECORD.-- Maximum elevation, 1,048.29 ft (319.519 m) Mar. 10, 1950; minimum observed, 1,038.17 ft (316.434 m) Aug. 27, 1910.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,046.91 ft (319.098 m) Aug. 6; minimum, 1,044.21 ft (318.275 m) Jan. 10, 11.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1046.60	1045.96	1044.44	1044.25	1044.61	1045.54	1045.65	1045.84	1046.73	1046.63	1046.86	1046.86
2	1046.60	1045.81	1044.40	1044.24	1044.62	1045.55	1045.67	1045.93	1046.71	1046.64	1046.87	1046.85
3	1046.58	1045.68	1044.41	1044.24	1044.63	1045.57	1045.67	1046.02	1046.65	1046.65	1046.88	1046.84
4	1046.59	1045.58	1044.41	1044.24	1044.63	1045.57	1045.68	1046.09	1046.66	1046.65	1046.87	1046.82
5	1046.60	1045.47	1044.41	1044.24	1044.62	1045.58	1045.68	1046.19	1046.69	1046.67	1046.87	1046.80
6	1046.60	1045.36	1044.40	1044.23	1044.63	1045.60	1045.68	1046.29	1046.71	1046.68	1046.86	1046.77
7	1046.60	1045.28	1044.39	1044.23	1044.64	1045.61	1045.70	1046.39	1046.74	1046.68	1046.85	1046.74
8	1046.60	1045.19	1044.38	1044.24	1044.65	1045.61	1045.68	1046.45	1046.76	1046.69	1046.86	1046.71
9	1046.60	1045.13	1044.37	1044.23	1044.66	1045.63	1045.65	1046.49	1046.75	1046.69	1046.86	1046.70
10	1046.61	1045.07	1044.36	1044.22	1044.66	1045.63	1045.64	1046.55	1046.75	1046.70	1046.86	1046.68
11	1046.61	1045.00	1044.35	1044.22	1044.66	1045.67	1045.60	1046.65	1046.72	1046.70	1046.85	1046.66
12	1046.62	1044.95	1044.35	1044.24	1044.66	1045.62	1045.57	1046.71	1046.72	1046.72	1046.85	1046.64
13	1046.62	1044.90	1044.35	1044.26	1044.67	1045.63	1045.55	1046.68	1046.70	1046.72	1046.83	1046.63
14	1046.62	1044.85	1044.34	1044.30	1044.67	1045.63	1045.52	1046.60	1046.69	1046.73	1046.83	1046.62
15	1046.62	1044.82	1044.33	1044.32	1044.67	1045.64	1045.50	1046.51	1046.69	1046.73	1046.83	1046.61
16	1046.63	1044.78	1044.32	1044.33	1044.68	1045.64	1045.45	1046.45	1046.71	1046.74	1046.80	1046.60
17	1046.64	1044.75	1044.31	1044.33	1044.70	1045.65	1045.40	1046.38	1046.72	1046.74	1046.81	1046.60
18	1046.63	1044.71	1044.29	1044.34	1044.72	1045.65	1045.37	1046.37	1046.72	1046.74	1046.81	1046.60
19	1046.62	1044.68	1044.28	1044.34	1044.76	1045.67	1045.34	1046.37	1046.73	1046.74	1046.81	1046.59
20	1046.61	1044.64	1044.28	1044.34	1044.83	1045.66	1045.40	1046.34	1046.71	1046.74	1046.81	1046.58
21	1046.63	1044.62	1044.27	1044.34	1044.98	1045.66	1045.44	1046.35	1046.71	1046.75	1046.81	1046.57
22	1046.62	1044.59	1044.27	1044.34	1045.12	1045.65	1045.48	1046.41	1046.72	1046.75	1046.82	1046.56
23	1046.60	1044.57	1044.27	1044.38	1045.23	1045.66	1045.53	1046.47	1046.70	1046.76	1046.82	1046.55
24	1046.59	1044.56	1044.28	1044.42	1045.31	1045.69	1045.58	1046.53	1046.69	1046.77	1046.82	1046.55
25	1046.59	1044.53	1044.28	1044.46	1045.39	1045.74	1045.62	1046.59	1046.68	1046.78	1046.84	1046.55
26	1046.60	1044.52	1044.29	1044.50	1045.45	1045.72	1045.67	1046.63	1046.65	1046.81	1046.84	1046.55
27	1046.58	1044.51	1044.29	1044.54	1045.49	1045.69	1045.66	1046.68	1046.66	1046.78	1046.85	1046.54
28	1046.57	1044.49	1044.28	1044.57	1045.51	1045.69	1045.69	1046.69	1046.66	1046.78	1046.85	1046.53
29	1046.53	1044.45	1044.27	1044.59	1045.53	1045.66	1045.71	1046.70	1046.66	1046.80	1046.86	1046.53
30	1046.33	1044.45	1044.27	1044.60	---	1045.65	1045.75	1046.73	1046.65	1046.83	1046.86	1046.53
31	1046.13	---	1044.26	1044.61	---	1045.66	---	1046.75	---	1046.84	1046.86	---
MEAN	1046.58	1044.93	1044.33	1044.35	1044.88	1045.64	1045.58	1046.45	1046.70	1046.73	1046.84	1046.65
MAX	1046.64	1045.96	1044.44	1044.61	1045.53	1045.74	1045.75	1046.75	1046.76	1046.84	1046.88	1046.86
MIN	1046.13	1044.45	1044.26	1044.22	1044.61	1045.54	1045.34	1045.84	1046.65	1046.63	1046.80	1046.53

CAL YR 1975 MEAN 1045.82 MAX 1046.84 MIN 1044.23
WTR YR 1976 MEAN 1045.81 MAX 1046.88 MIN 1044.22

12472600 CRAB CREEK NEAR BEVERLY, WA

LOCATION.--Lat 46°49'48", long 119°49'48", in NW¼SW¼ sec.33, T.16 N., R.24 E., Grant County, Hydrologic Unit 17020015, on right bank 4.9 mi (7.9 km) east of Beverly and at mile 4.5 (7.2 km).

DRAINAGE AREA.--4,842 mi² (12,541 km²), of which 665 mi² (1,722 km²) in the vicinity of Soap Lake is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 500 ft (152 m), from topographic map.

REMARKS.--Records good. Many diversions above station for irrigation. Flow largely regulated by Potholes Reservoir 41.3 mi (66.5 km) upstream and is supplemented by return flows from parts of the Columbia Basin project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 346 ft³/s (9.80 m³/s) Nov. 13, 1973; maximum gage height, 5.97 ft (1.820 m) Feb. 16, 1969, backwater from ice; minimum discharge, 10 ft³/s (0.28 m³/s) Jan. 10, 1963, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 312 ft³/s (8.84 m³/s) Oct. 26, gage height, 4.62 ft (1.408 m); minimum, 103 ft³/s (2.92 m³/s) Mar. 24, gage height, 2.19 ft (0.668 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	274	252	257	218	172	200	174	209	185	215	284
2	249	266	257	243	207	170	197	165	208	174	224	275
3	246	260	256	243	201	175	199	173	207	173	231	271
4	241	261	260	244	188	178	200	166	207	180	242	264
5	243	257	261	244	165	186	184	171	206	197	245	253
6	250	255	258	249	181	181	178	185	207	200	245	242
7	259	258	259	249	183	182	189	185	227	198	248	253
8	264	258	259	251	178	182	195	182	246	197	254	253
9	270	252	255	250	188	178	201	187	249	196	261	255
10	277	245	251	249	186	188	207	180	241	201	273	259
11	274	244	256	261	183	180	197	179	233	210	280	258
12	273	241	253	265	184	169	191	181	225	211	278	255
13	275	237	252	262	190	170	197	168	215	223	271	262
14	277	235	252	256	186	165	202	176	218	212	268	268
15	280	233	248	254	182	164	194	175	222	201	263	269
16	282	236	253	261	170	165	194	171	225	194	264	270
17	283	232	250	264	187	171	188	170	227	186	270	269
18	279	229	250	265	189	165	173	178	225	182	272	273
19	282	225	251	260	178	162	181	178	218	182	267	278
20	283	230	247	256	175	155	178	177	215	181	265	277
21	295	237	244	252	178	149	191	188	224	183	270	276
22	299	245	243	250	179	144	185	188	215	191	276	276
23	303	250	246	251	176	148	192	186	222	195	274	277
24	304	252	250	244	172	136	192	182	220	196	276	277
25	307	253	252	249	175	156	203	176	221	196	278	275
26	310	249	257	245	175	154	206	177	225	189	281	274
27	307	258	262	242	175	154	190	174	222	199	286	277
28	301	256	267	250	179	150	178	176	215	210	289	280
29	297	255	268	245	174	170	176	183	206	216	288	283
30	286	250	259	243	---	176	177	196	196	221	287	282
31	277	---	263	237	---	181	---	205	---	215	287	---
TOTAL	8621	7433	7891	7791	5302	5176	5735	5552	6596	6094	[illegible]228	8065
MEAN	278	248	255	251	183	167	191	179	220	197	265	269
MAX	310	274	268	265	218	188	207	205	249	223	289	284
MIN	241	225	243	237	165	136	173	165	196	173	215	242
AC-FT	17100	14740	15650	15450	10520	10270	11380	11010	13080	12090	16320	16000

CAL YR 1975 TOTAL 84309 MEAN 231 MAX 330 MIN 140 AC-FT 167200
WTR YR 1976 TOTAL 82484 MEAN 225 MAX 310 MIN 136 AC-FT 163600

12472600 CRAB CREEK NEAR BEVERLY, WA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at lower Crab Creek road bridge, 0.8 mi (1.3 km) upstream from gage.

PERIOD OF RECORD.--Water years 1959-72, 1975 to September 1976 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: August 1959 to September 1962, July 1968 to August 1970.

REMARKS.--Prior to 1975 samples collected at site 1.5 mi (2.4 km) upstream from gage. Water quality records published as 12472500 "near Smyrna" for period 1959-63.

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATF COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
20...	1615	288	880	8.7	11.5	42	13	13.4	B2000	B60
27...	1450	307	990	8.7	9.1	54	11	13.4	B4000	B24
NOV										
10...	1410	245	960	8.6	6.4	25	12	13.7	>600	50
17...	1425	231	950	8.5	5.0	33	9	14.5	B1400	B20
DEC										
08...	1440	258	910	8.4	3.9	29	8	14.0	B100	B2
15...	1540	249	870	8.4	2.8	21	11	14.0	B100	B8
JAN										
05...	1520	244	870	7.2	.6	21	9	15.0	B50	B4
19...	1440	260	930	8.5	3.1	33	15	14.0	B100	<5
FEB										
02...	1330	206	960	7.4	3.4	21	20	13.7	B100	B5
23...	1515	181	950	8.3	8.4	22	26	13.3	B100	<2
MAR										
08...	1425	181	930	7.9	9.2	17	25	14.6	B100	<10
22...	1455	144	102	8.5	9.3	13	24	11.9	B200	<5
APR										
12...	1420	190	800	8.5	15.5	29	30	11.9	B60	B45
26...	1445	205	800	8.7	12.4	33	20	13.6	B300	<10
MAY										
10...	1425	181	750	8.4	19.3	33	55	9.5	>50	72
24...	1440	183	740	8.3	16.5	29	30	11.2	B600	B30
JUN										
07...	1445	231	650	8.4	23.0	33	25	11.0	240	180
21...	1420	227	680	8.1	19.8	21	45	8.9	B3000	B30
JUL										
12...	1410	215	725	8.5	21.0	33	50	9.5	B3000	B45
26...	1455	193	750	8.5	24.1	33	50	8.5	B100	52
AUG										
09...	1520	264	810	8.4	23.8	79	22	8.4	B7000	440
23...	1350	273	775	8.4	21.4	33	17	9.6	--	B76
SEP										
13...	1405	263	750	9.1	18.8	29	19	10.2	B400	B58
20...	1355	275	750	8.3	20.0	25	20	8.6	<100	B42

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT									
20...	1.2	.11	.13	.06	0	2	10	.0	0
27...	1.2	.10	.16	.10	2	15	53	--	10
NOV									
10...	2.4	.11	.12	.01	0	2	12	.0	0
17...	2.6	.14	.24	.17	0	2	9	.0	0
DEC									
08...	2.4	.15	.15	.11	0	3	9	.1	0
15...	2.5	.15	.15	.10	0	--	13	.1	0
JAN									
05...	2.5	.11	.14	.11	0	1	12	.0	0
19...	2.3	.13	.15	.09	0	2	6	.0	0
FEB									
02...	2.6	.28	.20	.13	0	1	10	.0	0
23...	3.0	.06	.20	.09	0	3	7	.0	0
MAR									
08...	2.3	.08	.19	.08	0	3	25	.0	10
22...	2.6	.11	.25	.07	0	1	6	.0	0
APR									
12...	1.4	.09	.29	.11	0	1	7	.0	0
26...	1.3	.11	.23	.03	0	2	6	.0	0
MAY									
10...	1.4	.14	.39	.02	0	1	12	.0	0
24...	1.2	.11	.18	.03	0	2	6	.0	0
JUN									
07...	1.0	.08	.16	.02	0	1	8	.0	0
21...	1.4	.16	.20	.02	10	2	9	.0	0
JUL									
12...	1.2	.21	.24	.03	0	2	8	.0	0
26...	1.4	.18	.20	.02	0	4	42	.0	0
AUG									
09...	1.1	.20	.19	.08	0	5	16	.0	0
23...	1.1	.10	.13	.02	0	2	25	.0	0
SEP									
13...	1.5	.10	.14	.03	0	3	11	.0	10
20...	1.5	.12	.14	.04	0	2	11	.0	10

B Results based upon colony counts outside the ideal range.

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WA

LOCATION.--Lat 46°37'44", long 119°51'49", in SE¼NW¼ sec.7, T.13 N., R.24 E., Grant County, Hydrologic Unit 17020016, on left bank 2.6 mi (4.2 km) downstream from Priest Rapids Dam, 14.7 mi (23.7 km) south of Beverly, and at mile 394.5 (634.8 km).

DRAINAGE AREA.--96,000 mi² (249,000 km²), approximately.

PERIOD OF RECORD.--January 1917 to current year. January 1917 to September 1930, at site 3.4 mi (5.5 km) downstream, published as "at Vernita." October 1930 to July 27, 1959, at site 46.5 mi (74.8 km) upstream, published as "at Trinidad."

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Oct. 1, 1930, nonrecording gages at site 3.4 mi (5.5 km) downstream at datum 388.7 ft (118.48 m) above mean sea level, unadjusted. Oct. 1, 1930, to July 27, 1959, water-stage recorder at site 46.5 mi (74.8 km) upstream at datum 499.3 ft (152.19 m) above mean sea level (river-profile survey).

REMARKS.--Records excellent. Diversions for irrigation of about 500,000 acres (2,020 km²) above station. Flow regulated by 10 major reservoirs and numerous smaller reservoirs and powerplants.

AVERAGE DISCHARGE.--59 years, 120,900 ft³/s (3,420 m³/s), 87,590,000 acre-ft/yr (108 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 692,600 ft³/s (19,600 m³/s) June 12, 1948, gage height, 59.35 ft (18.090 m), site and datum then in use; minimum, 4,120 ft³/s (117 m³/s) Feb. 10, 1932, gage height, 11.40 ft (3.475 m) site and datum then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1894, reached a discharge of about 740,000 ft³/s (21,000 m³/s), based on information obtained at other points.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 282,000 ft³/s (7,990 m³/s) July 18, elevation, 416.26 ft (126.876 m); minimum, 32,100 ft³/s (909 m³/s) Apr. 11, elevation, 395.68 ft (120.603 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78800	91600	108000	132000	121000	155000	156000	144000	196000	156000	165000	165000
2	78000	80600	82100	134000	136000	153000	130000	150000	176000	168000	190000	150000
3	62600	86800	95600	103000	136000	156000	118000	131000	172000	166000	231000	152000
4	44900	80100	95600	83000	145000	153000	127000	135000	171000	159000	226000	147000
5	51000	102000	112000	129000	141000	148000	136000	172000	166000	172000	228000	145000
6	75900	97000	85100	133000	145000	166000	127000	159000	162000	168000	219000	136000
7	79500	100000	91200	119000	148000	159000	113000	161000	171000	170000	216000	182000
8	79100	97700	131000	120000	146000	163000	122000	224000	147000	170000	205000	195000
9	77800	80200	110000	134000	137000	166000	107000	237000	139000	162000	180000	186000
10	68300	108000	109000	105000	156000	154000	39300	209000	130000	182000	197000	171000
11	64600	90500	135000	108000	167000	150000	49300	222000	175000	167000	212000	159000
12	52300	101000	137000	117000	151000	154000	121000	207000	168000	169000	202000	120000
13	69800	92500	109000	133000	150000	141000	157000	193000	154000	173000	183000	122000
14	93500	78700	91600	112000	144000	118000	176000	186000	153000	165000	174000	123000
15	90700	95500	117000	94800	115000	143000	160000	191000	138000	196000	166000	127000
16	82700	98700	121000	117000	112000	128000	141000	187000	157000	204000	162000	112000
17	72000	129000	129000	115000	145000	179000	178000	190000	143000	220000	159000	110000
18	71800	127000	140000	94900	150000	148000	176000	203000	158000	239000	227000	110000
19	63200	137000	115000	115000	155000	157000	156000	200000	167000	237000	218000	67400
20	87800	108000	113000	132000	162000	127000	152000	186000	177000	243000	207000	81200
21	106000	118000	100000	147000	128000	105000	148000	181000	183000	230000	180000	117000
22	112000	93800	123000	128000	114000	135000	144000	184000	206000	201000	185000	117000
23	88200	87500	127000	128000	149000	161000	151000	191000	194000	199000	177000	111000
24	102000	126000	97800	131000	172000	152000	126000	195000	188000	179000	175000	101000
25	92800	115000	78800	128000	162000	134000	126000	193000	185000	171000	156000	89000
26	77500	118000	104000	130000	154000	137000	144000	192000	172000	169000	165000	75000
27	98800	87600	90000	118000	155000	130000	150000	189000	161000	171000	154000	101000
28	105000	107000	84000	128000	129000	83800	152000	181000	175000	169000	214000	110000
29	77700	108000	119000	146000	139000	130000	153000	168000	165000	197000	189000	108000
30	101000	110000	132000	137000	---	138000	162000	193000	159000	200000	176000	110000
31	106000	---	123000	143000	---	112000	---	185000	---	181000	182000	---
TOTAL	2511300	3052800	3405800	3794700	4164000	4415800	4097600	5739000	5008000	5753000	5920000	3799600
MEAN	81010	101800	109900	122400	143600	142400	136600	185100	166900	185600	191000	126700
MAX	112000	137000	140000	147000	172000	166000	178000	237000	206000	243000	231000	195000
MIN	44900	78700	78800	83000	112000	83800	39300	131000	130000	156000	154000	67400
AC-FT	4981000	6055000	6755000	7527000	8259000	8759000	8128000	11380000	9933000	11410000	11740000	7537000

CAL YR 1975 TOTAL 42187300 MEAN 115600 MAX 212000 MIN 43500 AC-FT 83680000
WTR YR 1976 TOTAL 51661600 MEAN 141200 MAX 243000 MIN 39300 AC-FT 102500000

12472900 COLUMBIA RIVER AT VERNITA BRIDGE, NEAR PRIEST RAPIDS DAM, WA

LOCATION.--Lat 46°38'34", long 119°43'54", in NW¼SE¼ sec.6, T.13 N., R.25 E., Grant County, Hydrologic Unit 17020016, at State Highway 24 Vernita Bridge crossing, 9.0 mi (14.5 km) downstream from Priest Rapids Dam, and at mile 388.1 (624.5 km).

DRAINAGE AREA.--96,000 mi^2 (248,600 km^2), approximately.

PERIOD OF RECORD.--Water years 1962-63, 1972, 1974 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: July 1974 to current year.

INSTRUMENTATION.--Temperature recorder since July 1974.

REMARKS.--October 1971 to September 1972, at site 6.4 mi (10.3 km) upstream, published as 12472800 "below Priest Rapids Dam." Prior to October 1971 published as 12472800 "at Vernita Ferry."

COOPERATION.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data for water-quality samples listed below furnished by Washington Department of Ecology. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 20.0°C Aug. 29 to Sept. 1, 1974; minimum, 1.5°C Feb. 8-10, 1975.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 18.5°C Aug. 11-15, 25, 27, Sept. 3-6; minimum, 2.0°C Feb. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT									
20...	1530	101000	150	8.2	13	4	9.7	B40	B2
27...	1350	135000	140	8.2	4	4	10.1	B20	B2
NOV									
10...	1340	124000	130	8.1	4	4	11.2	B110	B2
17...	1315	134000	140	8.1	8	2	11.1	B30	<2
DEC									
08...	1405	146000	140	7.7	21	8	12.0	250	<2
15...	1510	135000	150	8.3	8	4	12.6	B45	B2
JAN									
05...	1435	140000	150	7.5	13	5	13.0	B16	<2
19...	1350	129000	160	7.9	17	6	13.6	B30	<2
FEB									
02...	1250	149000	160	7.1	8	3	14.7	B34	B2
23...	1420	174000	160	7.6	13	7	14.1	B16	<2
MAR									
08...	1335	182000	160	7.8	8	6	14.9	B14	<2
22...	1400	156000	160	7.7	4	9	14.2	B30	<2
APR									
12...	1335	138000	178	8.0	13	6	13.4	16	<2
26...	1400	161000	161	8.0	17	9	13.0	18	<2
MAY									
10...	1340	208000	142	7.8	17	9	13.7	54	2
24...	1400	199000	133	7.6	17	7	13.2	B30	<2
JUN									
07...	1400	177000	125	8.0	17	5	12.6	B26	<2
21...	1335	173000	118	7.7	4	5	12.9	B30	<2
JUL									
12...	1320	172000	121	8.1	13	3	12.0	42	<2
26...	1355	177000	131	7.9	13	5	10.8	B26	B2
AUG									
09...	1430	178000	131	7.9	8	6	10.5	200	B4
23...	1255	173000	127	7.8	8	6	10.3	--	B2
SEP									
13...	1315	136000	109	8.5	13	1	10.7	B35	B2
20...	1305	80000	121	8.1	21	2	10.3	68	<2

B Results based upon colony counts outside the ideal range.

12472900 COLUMBIA RIVER AT VERNITA BRIDGE, NEAR PRIEST RAPIDS DAM, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
OCT									
20...	68	12	21	3.7	2.9	1.4	68	0	56
27...	66	11	20	3.9	2.5	1.0	67	--	55
NOV									
10...	66	5	19	4.5	2.5	1.1	74	--	61
17...	66	8	20	4.0	2.0	.8	71	--	58
DEC									
08...	64	10	18	4.6	2.6	1.0	66	--	54
15...	66	11	19	4.4	3.0	1.3	66	--	54
JAN									
05...	70	6	20	4.8	3.3	1.3	78	--	64
19...	72	7	21	4.8	3.0	1.6	79	--	65
FEB									
02...	79	12	22	5.9	3.3	1.0	82	--	67
23...	78	12	23	5.0	3.4	1.5	80	--	66
MAR									
08...	73	8	22	4.5	2.2	.9	80	--	66
22...	73	8	21	5.0	2.5	1.1	79	--	65
APR									
12...	81	13	23	5.8	3.4	1.2	83	--	68
26...	76	11	22	5.2	2.7	1.1	80	--	66
MAY									
10...	65	4	19	4.2	2.2	.9	74	--	61
24...	61	7	18	4.0	2.2	1.0	66	--	54
JUN									
07...	58	8	17	3.8	2.1	.9	61	0	50
21...	53	0	15	3.7	1.9	.9	64	0	53
JUL									
12...	59	8	17	3.9	1.9	.8	62	--	51
26...	61	7	18	3.8	2.0	1.1	65	--	53
AUG									
09...	63	16	19	3.7	2.6	1.2	57	--	47
23...	62	9	19	3.6	1.9	.8	65	--	53
SEP									
13...	51	1	15	3.4	2.6	1.0	61	--	50
20...	54	4	16	3.5	2.4	.8	62	--	51

DATE	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO, PHOS-PHORUS (P) (MG/L)
OCT									
20...	.7	12	1.5	.22	.10	.37	.47	.04	.01
27...	.7	11	1.4	1.7	.70	.06	.76	.09	.01
NOV									
10...	.9	11	.2	.09	.03	.14	.17	.03	.00
17...	.9	6.2	.8	.10	.02	.13	.15	.03	.01
DEC									
08...	2.1	8.7	1.6	.12	.10	.35	.45	.04	.01
15...	.5	12	1.3	.12	.08	.30	.38	.03	.02
JAN									
05...	3.9	15	1.9	.16	.03	.15	.18	.02	.01
19...	1.6	12	2.2	.18	.07	.27	.34	.04	.02
FEB									
02...	10	15	1.5	.23	.03	.09	.12	.03	.02
23...	3.2	15	1.0	.19	.04	.19	.23	.06	.02
MAR									
08...	2.0	14	.9	.15	.03	.09	.12	.04	.02
22...	2.5	13	1.8	.16	.05	.22	.27	.05	.01
APR									
12...	1.3	16	1.9	.11	.02	.22	.24	.05	.01
26...	1.3	12	1.1	.09	.03	.21	.24	.05	.01
MAY									
10...	1.9	12	1.2	.01	.04	.30	.34	.06	.00
24...	2.7	11	1.5	.00	.03	.19	.22	.04	.00
JUN									
07...	1.0	9.8	1.1	.00	.02	.25	.27	.04	.00
21...	2.0	9.1	1.1	.00	.02	.13	.15	.02	.00
JUL									
12...	.8	9.1	.8	.01	.04	.14	.18	.02	.00
26...	1.3	9.8	1.8	.01	.07	.40	.47	.03	.01
AUG									
09...	1.1	9.6	1.6	.05	.09	.31	.40	.04	.01
23...	1.6	9.9	.8	.03	.02	.12	.14	.04	.00
SEP									
13...	.3	8.5	1.4	.05	.02	.14	.16	.02	.00
20...	.8	8.1	.4	.01	.02	.10	.12	.02	.00

12472900 COLUMBIA RIVER AT VERNITA BRIDGE, NEAR PRIEST RAPIDS DAM, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.0	18.0	18.0	14.0	13.5	13.5	9.0	8.5	9.0	5.0	5.0	5.0
2	18.0	18.0	18.0	14.0	13.5	14.0	9.0	9.0	9.0	5.0	5.0	5.0
3	18.0	17.5	18.0	14.0	13.5	14.0	9.0	9.0	9.0	5.0	5.0	5.0
4	18.0	17.5	17.5	14.0	14.0	14.0	9.0	9.0	9.0	5.0	4.5	5.0
5	17.5	17.0	17.5	14.0	14.0	14.0	9.0	8.5	8.5	4.5	4.5	4.5
6	17.0	17.0	17.0	14.0	13.5	13.5	8.5	8.0	8.0	4.5	4.5	4.5
7	17.0	16.5	17.0	13.5	13.0	13.0	8.0	7.5	7.5	4.5	4.0	4.5
8	16.5	16.5	16.5	13.0	13.0	13.0	7.5	7.0	7.5	4.5	4.0	4.0
9	16.5	16.5	16.5	13.0	12.5	12.5	7.0	7.0	7.0	4.0	4.0	4.0
10	16.5	16.5	16.5	12.5	12.0	12.5	7.0	7.0	7.0	4.0	4.0	4.0
11	16.5	16.5	16.5	12.0	12.0	12.0	7.0	7.0	7.0	4.0	4.0	4.0
12	16.5	16.5	16.5	12.0	12.0	12.0	7.0	7.0	7.0	4.0	4.0	4.0
13	16.5	16.0	16.0	12.0	11.5	12.0	7.0	7.0	7.0	4.0	4.0	4.0
14	16.0	15.5	15.5	12.0	11.5	11.5	7.0	7.0	7.0	4.0	3.5	3.5
15	15.5	15.5	15.5	11.5	11.5	11.5	7.0	6.5	7.0	4.0	3.5	3.5
16	15.5	15.5	15.5	11.5	11.5	11.5	7.0	6.5	6.5	3.5	3.5	3.5
17	15.5	15.0	15.0	11.5	11.0	11.0	6.5	6.5	6.5	3.5	3.5	3.5
18	15.5	15.0	15.0	---	---	---	6.5	6.5	6.5	3.5	3.5	3.5
19	15.5	15.0	15.0	---	---	---	6.5	6.0	6.5	3.5	3.5	3.5
20	15.0	15.0	15.0	---	---	---	6.0	6.0	6.0	3.5	3.0	3.5
21	15.0	15.0	15.0	10.5	10.0	10.0	5.5	5.5	5.5	3.5	3.0	3.5
22	15.0	14.5	14.5	10.0	10.0	10.0	5.5	5.5	5.5	3.0	3.0	3.0
23	14.5	14.0	14.5	10.0	10.0	10.0	5.5	5.5	5.5	3.0	3.0	3.0
24	14.5	14.0	14.5	10.0	10.0	10.0	5.5	5.5	5.5	3.0	3.0	3.0
25	14.5	14.5	14.5	10.0	10.0	10.0	6.0	5.5	5.5	3.0	3.0	3.0
26	14.5	14.0	14.0	10.0	10.0	10.0	6.0	5.5	5.5	3.0	2.5	2.5
27	14.0	13.5	14.0	10.0	9.5	10.0	6.0	5.5	5.5	2.5	2.5	2.5
28	14.0	13.5	13.5	9.5	9.5	9.5	6.0	5.5	5.5	2.5	2.5	2.5
29	14.0	13.5	14.0	9.5	9.0	9.0	5.5	5.5	5.5	2.5	2.5	2.5
30	14.0	13.5	14.0	9.0	9.0	9.0	5.5	5.5	5.5	2.5	2.5	2.5
31	13.5	13.5	13.5	---	---	---	5.5	5.0	5.0	2.5	2.5	2.5
MONTH	18.0	13.5	15.5	14.0	9.0	11.5	9.0	5.0	6.5	5.0	2.5	3.5

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3.0	2.5	2.5	3.5	3.0	3.5	5.0	5.0	5.0	8.5	8.0	8.5
2	2.5	2.5	2.5	3.5	3.0	3.5	5.5	5.0	5.0	8.5	8.5	8.5
3	2.5	2.5	2.5	3.5	3.0	3.0	5.5	5.0	5.0	9.0	8.5	9.0
4	2.5	2.5	2.5	3.0	3.0	3.0	5.5	5.5	5.5	9.5	9.0	9.0
5	2.5	2.5	2.5	3.0	2.5	3.0	5.5	5.5	5.5	9.5	9.5	9.5
6	2.5	2.5	2.5	3.0	3.0	3.0	6.0	5.5	5.5	9.5	9.5	9.5
7	2.5	2.5	2.5	3.0	3.0	3.0	6.0	5.5	6.0	10.0	9.5	10.0
8	2.5	2.0	2.5	3.0	3.0	3.0	6.0	5.5	6.0	10.0	10.0	10.0
9	2.5	2.5	2.5	3.5	3.0	3.0	6.0	5.5	6.0	10.5	10.0	10.5
10	2.5	2.5	2.5	3.5	3.0	3.5	7.0	6.0	6.5	10.5	10.0	10.5
11	2.5	2.5	2.5	3.5	3.5	3.5	7.0	6.5	6.5	10.5	10.0	10.0
12	3.0	2.5	2.5	3.5	3.5	3.5	7.0	6.5	7.0	10.0	10.0	10.0
13	3.0	3.0	3.0	3.5	3.5	3.5	6.5	6.5	6.5	10.5	10.0	10.0
14	3.5	3.0	3.5	4.0	3.5	4.0	7.0	6.5	6.5	10.5	10.0	10.0
15	3.5	3.5	3.5	4.0	4.0	4.0	6.5	6.5	6.5	10.5	10.0	10.5
16	3.5	3.0	3.5	4.5	4.0	4.0	6.5	6.5	6.5	10.5	10.5	10.5
17	3.5	3.5	3.5	4.5	4.0	4.0	6.5	6.5	6.5	11.0	10.5	10.5
18	3.5	3.0	3.5	4.5	4.0	4.5	6.5	6.5	6.5	11.0	10.5	10.5
19	3.5	3.0	3.5	4.5	4.0	4.5	6.5	6.5	6.5	11.0	10.5	10.5
20	3.5	3.0	3.5	4.5	4.5	4.5	7.0	6.5	7.0	10.5	10.5	10.5
21	3.5	3.0	3.5	4.5	4.5	4.5	7.0	7.0	7.0	11.0	10.5	10.5
22	3.5	3.0	3.5	4.5	4.5	4.5	7.0	7.0	7.0	11.0	10.5	11.0
23	3.5	3.5	3.5	4.5	4.5	4.5	7.5	7.0	7.0	11.0	11.0	11.0
24	3.5	3.5	3.5	4.5	4.5	4.5	7.5	7.5	7.5	11.0	11.0	11.0
25	3.5	3.5	3.5	5.0	4.5	4.5	7.5	7.5	7.5	11.0	11.0	11.0
26	3.5	3.5	3.5	4.5	4.5	4.5	7.5	7.5	7.5	11.0	11.0	11.0
27	3.5	3.5	3.5	4.5	4.5	4.5	7.5	7.5	7.5	11.5	11.0	11.5
28	3.5	3.5	3.5	5.0	4.5	4.5	7.5	7.5	7.5	11.5	11.0	11.5
29	3.5	3.0	3.5	5.0	4.5	5.0	8.0	7.5	7.5	11.5	11.0	11.5
30	---	---	---	5.0	5.0	5.0	8.0	8.0	8.0	11.5	11.5	11.5
31	---	---	---	5.5	5.0	5.0	---	---	---	11.5	11.0	11.5
MONTH	3.5	2.0	3.0	5.5	2.5	4.0	8.0	5.0	6.5	11.5	8.0	10.5

12472900 COLUMBIA RIVER AT VERNITA BRIDGE, NEAR PRIEST RAPIDS DAM, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.5	11.0	11.0	14.0	14.0	14.0	17.0	17.0	17.0	18.0	18.0	18.0
2	11.5	11.0	11.5	14.0	14.0	14.0	17.0	17.0	17.0	18.0	18.0	18.0
3	11.5	11.5	11.5	14.0	13.5	14.0	17.5	17.0	17.5	18.5	18.0	18.0
4	11.5	11.5	11.5	14.5	14.0	14.0	17.5	17.5	17.5	18.5	18.5	18.5
5	12.0	11.5	11.5	14.5	13.5	14.5	17.5	17.5	17.5	18.5	18.5	18.5
6	12.0	12.0	12.0	15.0	14.5	14.5	17.5	17.5	17.5	18.5	18.0	18.0
7	12.5	12.0	12.0	14.5	14.5	14.5	18.0	17.5	18.0	18.0	17.5	17.5
8	13.0	12.5	12.5	15.0	14.5	14.5	18.0	18.0	18.0	18.0	17.5	17.5
9	13.0	12.5	13.0	15.0	14.5	15.0	18.0	18.0	18.0	17.5	17.5	17.5
10	13.0	13.0	13.0	15.0	14.5	15.0	18.0	18.0	18.0	17.5	17.0	17.0
11	13.5	13.0	13.0	15.0	15.0	15.0	18.5	18.0	18.0	17.0	17.0	17.0
12	13.0	13.0	13.0	15.0	15.0	15.0	18.5	18.0	18.5	17.0	16.5	17.0
13	13.0	13.0	13.0	15.0	15.0	15.0	18.5	18.0	18.5	16.5	16.5	16.5
14	13.0	13.0	13.0	15.5	15.0	15.0	18.5	18.0	18.0	16.5	16.5	16.5
15	13.0	13.0	13.0	15.5	15.0	15.0	18.5	18.0	18.0	16.5	16.5	16.5
16	13.0	13.0	13.0	15.5	15.0	15.5	18.0	18.0	18.0	17.0	16.5	16.5
17	13.5	13.0	13.5	15.5	15.5	15.5	18.0	17.5	18.0	17.0	16.5	16.5
18	13.5	13.5	13.5	15.5	15.5	15.5	18.0	17.5	18.0	17.0	16.5	16.5
19	13.5	13.5	13.5	16.0	15.5	16.0	18.0	17.5	18.0	17.0	16.5	17.0
20	13.5	13.5	13.5	16.5	16.0	16.0	17.5	17.5	17.5	17.0	16.5	17.0
21	13.5	13.0	13.5	17.0	16.5	16.5	18.0	17.5	17.5	17.0	17.0	17.0
22	13.5	13.5	13.5	17.0	16.5	17.0	18.0	18.0	18.0	17.0	16.5	17.0
23	13.5	13.5	13.5	17.0	16.5	17.0	18.0	17.5	18.0	17.0	17.0	17.0
24	13.5	13.5	13.5	17.0	16.5	17.0	18.0	18.0	18.0	17.0	17.0	17.0
25	13.5	13.5	13.5	17.5	17.0	17.0	18.5	18.0	18.5	17.5	17.0	17.0
26	13.5	13.0	13.5	17.5	17.0	17.5	18.0	18.0	18.0	17.5	17.0	17.5
27	13.5	13.5	13.5	17.5	17.5	17.5	18.5	18.0	18.0	17.5	17.0	17.5
28	14.0	13.5	14.0	17.5	17.0	17.5	18.0	18.0	18.0	17.5	17.0	17.5
29	14.0	14.0	14.0	17.5	17.0	17.5	18.0	18.0	18.0	17.5	17.0	17.0
30	14.0	14.0	14.0	17.5	17.0	17.0	18.0	18.0	18.0	17.5	17.0	17.0
31	---	---	---	17.0	17.0	17.0	18.0	18.0	18.0	---	---	---
MONTH	14.0	11.0	13.0	17.5	13.5	15.5	18.5	17.0	18.0	18.5	16.5	17.0
YEAR	18.5	2.0	10.5									

12473520 COLUMBIA RIVER AT RICHLAND, WA

LOCATION.--Lat 46°18'46", long 119°15'28", in NW¼NW¼ sec.36, T.10 N., R.28 E., Benton County, Hydrologic Unit 17020016, at city of Richland pumping plant, 4.8 mi (7.7 km) upstream from Yakima River.

DRAINAGE AREA.--96,900 mi² (251,000 km²), approximately.

PERIOD OF RECORD.-- Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: July 1974 to current year.

INSTRUMENTATION.--Temperature recorder since July 1974.

REMARKS.--Temperature recorder stopped July 29 to Aug. 2 (range in temperature 17.2 to 18.6°C). Water temperatures given in the table below were checked for accuracy of representing the average in the river cross-section by obtaining four thermal load measurements between September 1974 and September 1975. These indicated variations between the monitors recorded temperature and the average (discharge weighted) stream temperature as follows:

Date	Time	Monitor recorded Temperature °C	Average stream temperature (Discharge weighted) °C	Error in Monitor Record
Sept. 11, 1974	1400	18.9	18.3	+.06
Nov. 15	1115	11.4	11.5	-0.1
Apr. 8, 1975	1130	5.5	5.0	+0.5
Sept. 10	1130	18.8	18.7	+0.1

COOPERATION.--Energy Research and Development Administration.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 21.0°C Aug. 26, 29-31, Sept. 1, 3, 1974, July 28, Sept. 15, 1975; minimum, 2.0°C Feb. 5, 6, 10, 21, 22, 1975, Feb. 4-8, 1976.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 19.5°C Aug. 12; minimum, 2.0°C Feb. 4-8.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.5	17.5	18.0	13.5	13.0	13.0	---	---	---	5.0	4.5	5.0
2	18.5	17.5	18.0	13.5	13.0	13.5	10.0	9.0	9.5	5.0	4.5	5.0
3	18.0	17.5	18.0	14.5	13.5	14.0	10.0	9.5	9.5	5.0	5.0	5.0
4	18.0	17.0	18.0	14.5	13.5	14.0	---	---	---	5.0	5.0	5.0
5	18.0	16.5	17.0	14.0	13.5	13.5	---	---	---	5.0	4.5	5.0
6	17.0	16.5	16.5	13.5	12.5	13.0	---	---	---	5.0	4.5	4.5
7	17.0	16.0	16.5	12.5	12.0	12.5	---	---	---	5.0	4.5	4.5
8	16.5	15.5	16.0	12.0	11.5	12.0	---	---	---	5.0	4.5	4.5
9	16.0	16.0	16.0	12.0	11.5	12.0	7.5	7.5	7.5	4.5	4.0	4.5
10	17.0	16.0	16.5	11.5	11.0	11.5	7.5	7.0	7.5	4.5	4.0	4.0
11	16.5	15.5	16.0	11.5	11.0	11.5	7.0	7.0	7.0	5.0	4.0	4.5
12	16.5	16.0	16.0	11.5	11.0	11.5	7.0	6.5	7.0	4.5	4.0	4.5
13	16.5	15.5	16.0	11.5	11.0	11.5	7.0	7.0	7.0	4.5	4.0	4.0
14	16.0	15.5	15.5	11.5	11.0	11.5	7.0	6.5	6.5	4.5	4.0	4.0
15	16.0	15.0	15.5	11.5	11.0	11.5	7.0	6.5	6.5	5.0	4.5	4.5
16	15.5	15.0	15.0	11.0	10.5	10.5	7.0	6.5	6.5	4.5	4.0	4.5
17	15.5	14.5	15.0	10.5	10.0	10.5	6.5	6.5	6.5	4.5	4.0	4.5
18	15.5	14.5	15.0	10.5	10.0	10.0	6.5	6.0	6.5	4.0	4.0	4.0
19	14.5	14.0	14.5	10.0	10.0	10.0	6.0	6.0	6.0	4.0	4.0	4.0
20	14.5	14.5	14.5	10.0	9.5	10.0	6.0	6.0	6.0	4.0	4.0	4.0
21	14.5	14.0	14.5	9.5	9.5	9.5	6.0	5.5	6.0	4.0	3.5	3.5
22	14.5	14.0	14.0	9.5	9.0	9.5	6.0	5.5	5.5	3.5	3.5	3.5
23	14.5	14.0	14.0	9.5	9.0	9.5	5.5	5.5	5.5	3.5	3.0	3.5
24	14.0	13.0	13.5	10.0	9.5	9.5	6.0	5.5	5.5	3.5	3.0	3.0
25	13.5	13.0	13.5	10.0	9.5	10.0	6.0	6.0	6.0	3.0	3.0	3.0
26	13.5	13.0	13.5	---	---	---	6.0	6.0	6.0	3.0	3.0	3.0
27	13.5	13.0	13.0	---	---	---	6.0	5.5	5.5	3.5	3.0	3.5
28	13.0	13.0	13.0	---	---	---	6.0	6.0	6.0	3.5	3.0	3.5
29	13.0	13.0	13.0	---	---	---	6.0	6.0	6.0	3.5	3.0	3.0
30	13.5	13.0	13.5	---	---	---	6.0	5.5	5.5	3.0	3.0	3.0
31	13.5	13.0	13.0	---	---	---	5.5	5.0	5.5	3.0	3.0	3.0
MONTH	18.5	13.0	15.0	14.5	9.0	11.5	10.0	5.0	6.5	5.0	3.0	4.0

12473520 COLUMBIA RIVER AT RICHLAND, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3.0	3.0	3.0	4.0	3.5	3.5	5.5	5.0	5.5	9.0	8.0	8.5
2	3.5	3.0	3.0	3.5	3.0	3.5	6.0	5.0	5.5	10.0	9.0	9.5
3	3.0	2.5	3.0	3.5	3.0	3.5	6.5	5.5	6.0	10.0	9.0	9.5
4	2.5	2.0	2.0	3.5	2.5	3.0	6.5	6.0	6.0	10.5	9.5	10.0
5	2.5	2.0	2.0	3.5	2.5	3.0	7.0	6.0	6.5	10.5	9.5	10.0
6	2.5	2.0	2.5	3.5	3.0	3.0	7.0	6.5	6.5	10.5	9.5	10.0
7	2.5	2.0	2.5	3.5	3.0	3.5	7.0	6.0	6.5	11.0	10.0	10.5
8	3.0	2.0	2.5	3.5	3.0	3.5	7.0	6.5	6.5	11.0	10.0	10.5
9	3.0	2.5	2.5	4.0	3.0	3.5	7.5	6.5	7.0	11.0	10.0	11.0
10	2.5	2.5	2.5	4.5	3.5	4.0	8.0	7.0	7.5	11.0	10.5	10.5
11	3.0	2.5	2.5	4.0	3.5	4.0	9.5	8.0	8.5	11.0	10.0	10.5
12	4.0	3.0	3.5	4.0	3.5	4.0	9.0	8.0	8.5	11.5	10.5	11.0
13	3.5	3.0	3.5	4.5	4.0	4.0	8.0	7.0	7.5	11.5	10.5	11.0
14	3.5	3.5	3.5	5.0	4.0	4.5	7.5	7.0	7.5	11.5	10.5	11.0
15	4.0	3.5	3.5	4.5	4.5	4.5	7.5	7.0	7.0	11.5	10.5	11.0
16	5.0	4.0	4.5	4.5	4.5	4.5	7.5	6.5	7.0	12.0	10.5	11.5
17	4.5	4.5	4.5	5.5	4.5	5.0	7.5	7.0	7.0	12.0	11.0	11.5
18	4.5	4.0	4.0	---	---	---	7.5	6.5	7.0	12.0	10.5	11.5
19	4.5	4.0	4.0	---	---	---	7.5	6.5	7.0	11.5	10.5	11.0
20	4.5	4.0	4.0	---	---	---	8.0	7.0	7.5	---	---	---
21	4.0	4.0	4.0	---	---	---	7.5	7.0	7.0	---	---	---
22	4.0	4.0	4.0	---	---	---	8.0	7.0	7.5	---	---	---
23	4.0	3.5	4.0	5.5	5.0	5.0	8.0	6.5	7.5	---	---	---
24	4.0	3.5	4.0	6.0	5.0	5.5	8.5	7.5	8.0	---	---	---
25	4.0	3.5	4.0	6.0	5.0	5.5	8.5	7.5	8.0	12.0	11.0	11.5
26	4.0	4.0	4.0	6.0	5.5	5.5	8.0	7.5	8.0	12.5	11.0	11.5
27	4.0	3.5	4.0	5.5	5.0	5.5	8.5	7.5	8.0	12.0	11.5	12.0
28	4.0	3.5	3.5	6.0	5.5	5.5	8.5	7.5	8.0	12.0	11.0	11.5
29	4.0	3.5	3.5	6.0	5.5	5.5	8.5	7.5	8.5	12.5	11.5	11.5
30	---	---	---	6.0	5.5	5.5	9.0	8.0	8.5	12.0	11.5	12.0
31	---	---	---	6.0	5.5	5.5	---	---	---	12.0	11.5	11.5
MONTH	5.0	2.0	3.5	6.0	2.5	4.5	9.5	5.0	7.0	12.5	8.0	11.0

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MFAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.0	11.5	12.0	15.0	14.0	14.5	---	---	---	19.0	18.0	18.5
2	12.5	11.0	12.0	15.0	14.0	14.5	---	---	---	19.0	18.0	18.5
3	12.5	11.5	12.0	15.0	14.0	14.5	18.5	17.5	18.0	19.0	17.5	18.5
4	12.5	11.5	12.0	15.0	14.0	14.5	18.5	17.5	18.0	19.0	18.0	18.5
5	13.0	11.5	12.5	15.5	14.5	15.0	19.0	18.0	18.5	19.0	18.0	18.5
6	13.5	12.0	12.5	16.0	15.0	15.5	18.5	17.5	18.0	18.5	17.5	18.0
7	14.5	12.5	13.0	16.0	15.0	15.5	18.0	17.5	18.0	18.0	17.0	17.5
8	15.0	12.5	13.5	16.5	15.0	15.5	18.5	17.5	18.0	18.0	17.0	17.5
9	14.5	13.0	13.5	16.0	15.5	16.0	19.0	18.0	18.5	18.0	16.5	17.5
10	14.5	13.5	14.0	16.0	15.0	15.5	19.0	18.0	18.5	17.5	16.5	17.5
11	14.0	13.0	13.5	15.5	15.0	15.5	19.0	18.0	19.0	17.5	17.0	17.0
12	13.5	13.0	13.0	16.0	15.0	15.5	19.5	18.5	19.0	17.5	16.5	17.0
13	14.0	12.5	13.0	16.0	15.0	15.5	19.0	18.5	18.5	17.5	16.0	17.0
14	14.5	13.0	13.5	16.5	15.0	15.5	19.0	18.0	18.5	17.0	16.5	16.5
15	14.0	13.5	13.5	16.5	15.5	16.0	19.0	18.0	18.5	17.0	16.0	16.5
16	14.0	13.0	13.5	16.5	15.5	16.0	18.5	17.5	18.0	17.0	16.5	17.0
17	15.0	13.5	14.0	16.5	15.5	16.0	19.0	18.0	18.5	17.5	17.0	17.0
18	15.0	14.0	14.5	16.5	16.0	16.0	19.0	18.0	18.5	17.5	16.5	17.0
19	15.0	14.0	14.5	17.0	16.0	16.5	18.5	18.0	18.0	17.5	16.5	17.0
20	15.0	14.0	14.5	17.0	16.5	16.5	18.5	17.5	18.0	18.0	16.5	17.5
21	14.5	13.5	14.0	17.5	16.5	17.0	18.5	17.5	18.0	18.0	17.0	17.5
22	14.5	13.5	14.0	18.0	16.5	17.5	18.5	18.0	18.0	18.0	17.5	17.5
23	14.5	13.5	14.0	18.0	17.0	17.5	19.0	18.0	18.5	18.0	17.0	17.5
24	14.5	13.5	14.0	18.0	17.0	17.5	19.0	18.0	18.5	18.0	17.0	17.5
25	14.0	13.0	13.5	18.5	17.0	18.0	19.0	18.0	18.5	18.0	17.0	17.5
26	14.5	13.0	14.0	19.0	17.5	18.0	---	---	---	18.5	17.0	18.0
27	15.0	13.5	14.0	18.5	17.5	18.0	---	---	---	18.5	17.0	18.0
28	15.0	13.5	14.5	18.5	17.5	18.0	---	---	---	18.5	17.0	18.0
29	15.0	14.0	14.5	---	---	---	---	---	---	18.5	17.5	18.0
30	15.5	14.0	14.5	---	---	---	---	---	---	18.5	17.5	18.0
31	---	---	---	---	---	---	19.0	18.0	18.5	---	---	---
MONTH	15.5	11.0	13.5	19.0	14.0	16.0	---	---	---	19.0	16.0	17.5
YEAR	19.5	2.0	10.5									

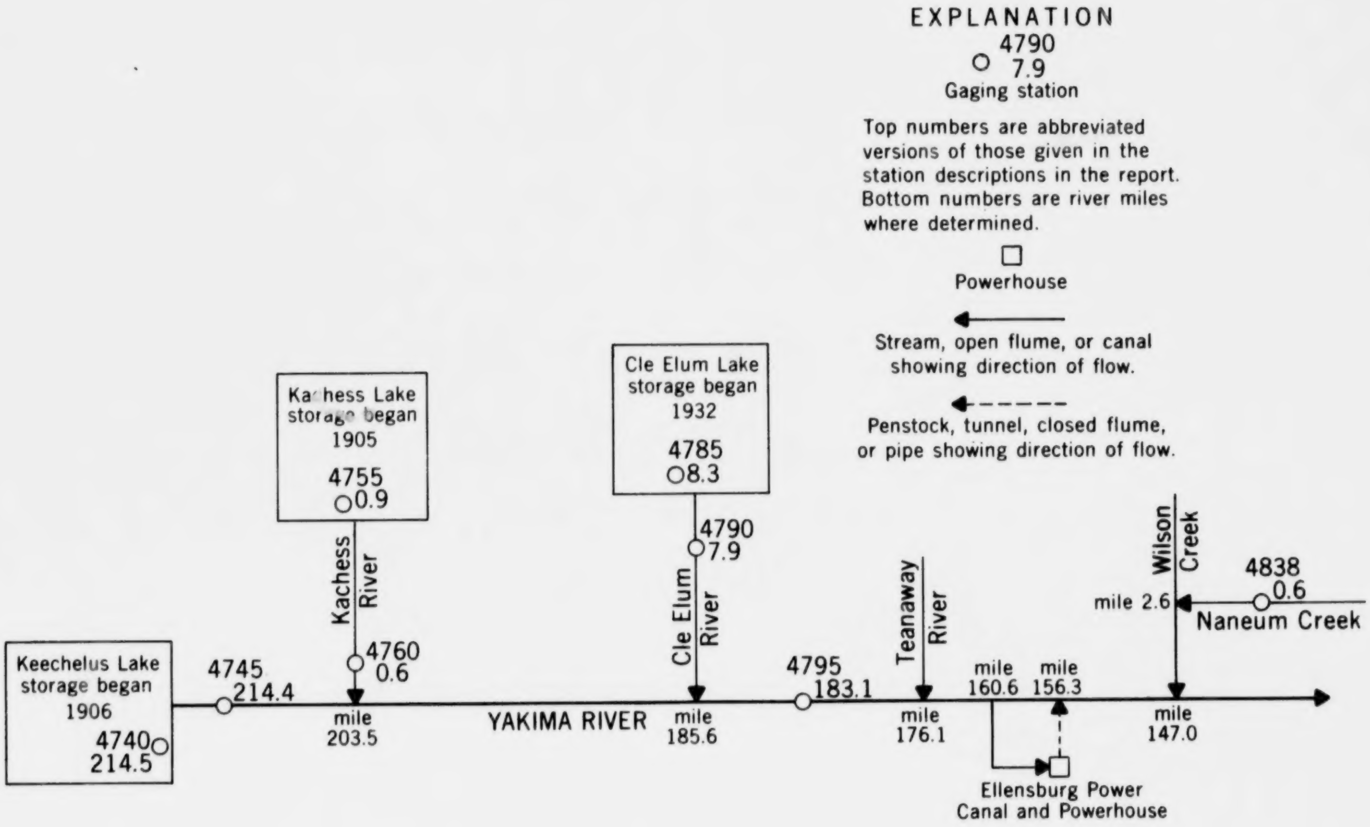
EXPLANATION
4790
7.9
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
Keechelus Lake storage began 1906
4740
214.5
4745
214.4
Kachess Lake storage began 1905
4755
0.9
Kachess River
4760
0.6
mile 203.5
YAKIMA RIVER
Cle Elum Lake storage began 1932
4785
8.3
4790
7.9
Cle Elum River
mile 185.6
4795
183.1
Teanaway River
mile 176.1
mile 160.6
mile 156.3
Ellensburg Power Canal and Powerhouse
Wilson Creek
mile 2.6
4838
0.6
Naneum Creek
mile 147.0

Figure 13. Gaging stations in Yakima River basin between Keechelus Lake and Naneum Creek.

12474500 YAKIMA RIVER NEAR MARTIN, WA

LOCATION.--Lat 47°19'17", long 121°20'06", in SW¼SW¼ sec.10, T.21 N., R.12 E., Kittitas County, Hydrologic Unit 17030001, Wenatchee National Forest, on left bank 800 ft (244 m) downstream from dam at outlet of Keechelus Lake, 2.9 mi (4.7 km) northwest of Martin, 9.5 mi (15.3 km) northwest of Easton, and at mile 214.4 (345.0 km).

DRAINAGE AREA.--54.7 mi^2 (141.7 km^2).

PERIOD OF RECORD.--October 1903 to current year. Prior to February 1904 monthly discharge only, published in WSP 1316.

REVISED RECORDS.--WSP 2186: 1910. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,422.40 ft (738.348 m) above mean sea level (Bureau of Reclamation bench mark). Prior to July 20, 1923, nonrecording gages at several sites within 2 mi (3 km) of present site at various datums.

REMARKS.--Records good. Flow completely regulated by Keechelus Lake. No diversion above station.

COOPERATION.--Gage-height record, 8 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 3 discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--73 years, 340 ft^3/s (9.629 m^3/s), 246,300 acre-ft/yr (304 hm^3/yr), adjusted for storage since January 1906.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,370 ft^3/s (209 m^3/s) Mar. 26, 1915, when temporary crib dam was washed out; practically no flow when gates in Keechelus Lake Dam are closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft^3/s (49.6 m^3/s) July 20, gage height, 9.71 ft (2.960 m); minimum daily, 2.5 ft^3/s (0.071 m^3/s) Sept. 21-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	40	11	924	879	3.8	1000	3.2	930	550	1430	1210
2	271	40	20	921	873	3.8	998	3.6	927	550	1410	1140
3	271	40	22	918	870	3.9	992	4.0	924	550	1390	1070
4	271	41	338	921	864	3.9	929	4.0	924	550	1400	986
5	271	42	861	912	434	3.9	861	4.0	921	550	1380	917
6	271	43	1060	918	3.3	3.9	861	4.2	918	550	1350	856
7	269	43	1040	921	3.4	3.9	856	4.6	918	552	1340	794
8	269	44	1100	918	3.4	4.0	855	5.2	915	552	1330	729
9	267	44	1120	915	3.4	4.0	855	6.0	915	552	1310	669
10	267	43	1120	918	3.4	4.0	852	6.7	915	552	1290	612
11	267	28	1120	918	3.4	4.0	852	6.7	915	552	1530	554
12	267	3.5	1110	918	3.5	4.0	849	7.1	915	278	1710	477
13	267	3.5	1110	915	3.5	4.0	849	7.6	912	3.2	1670	392
14	151	3.5	1110	909	3.5	4.1	846	8.0	912	3.2	1640	321
15	36	3.5	1110	894	3.5	4.1	846	8.5	909	3.2	1600	270
16	36	3.5	1110	891	3.5	4.1	843	9.0	909	590	1560	231
17	36	3.5	1110	484	3.6	4.1	840	8.5	697	942	1520	204
18	36	3.5	1100	3.5	3.6	4.1	837	8.5	545	936	1480	182
19	36	3.5	1000	3.5	3.6	4.2	834	8.5	545	924	1440	166
20	36	3.5	942	3.5	3.6	4.2	831	7.6	548	1430	1410	105
21	36	3.5	936	3.5	3.6	4.2	828	582	548	1730	1370	2.5
22	36	3.5	930	486	3.6	4.2	815	927	550	1700	1340	2.5
23	36	3.5	936	897	3.7	4.2	815	927	550	1680	1300	2.5
24	37	3.5	933	894	3.7	4.2	822	930	550	1660	1260	2.5
25	37	3.5	927	891	3.7	4.2	819	930	552	1630	1230	2.5
26	37	3.5	927	888	3.7	4.3	343	930	550	1610	1310	2.5
27	37	3.5	927	888	3.7	4.3	3.6	930	550	1580	1310	2.5
28	38	3.5	924	885	3.8	4.3	3.2	930	548	1560	1290	2.5
29	38	3.5	924	885	3.8	514	3.2	930	550	1530	1240	2.5
30	40	3.5	924	882	---	1020	2.9	930	550	1490	1230	2.5
31	40	---	924	879	---	1010	---	930	---	1460	1250	---
TOTAL	4278	514.5	27726	23604.0	4005.5	2657.9	21942.9	10001.5	22512	28799.6	43320	11910.0
MEAN	138	17.2	894	761	138	85.7	731	323	750	929	1397	397
MAX	271	44	1120	924	879	1020	1000	930	930	1730	1710	1210
MIN	36	3.5	11	3.5	3.3	3.8	2.9	3.2	545	3.2	1230	2.5
AC-FT	8490	1020	54990	46820	7940	5270	43520	19840	44650	57120	85930	23620
†	+6,520	+36,770	+16,750	-14,520	+6,660	+3,630	-22,480	+37,770	-6,190	-33,140	-74,560	-18,740
MEAN‡	244	635	1,167	525	254	145	354	937	646	390	185	82.0
CFSM‡	4.46	11.61	21.33	9.60	4.64	2.65	6.47	17.13	11.81	7.13	3.38	1.50
IN.‡	5.15	12.95	24.59	11.07	5.00	3.05	7.21	19.75	13.18	8.22	3.90	1.67
AC-FT‡	15,010	37,790	71,740	32,300	14,600	8,900	21,040	57,610	38,460	23,980	11,370	4,880

CAL YR 1975: TOTAL 164,973.5 MEAN 452 MAX 1,130 MIN 3.5 AC-FT 327,200
DO.....: MEAN‡ 477 CFSM‡ 8.72 IN.‡ 118.30 AC-FT‡ 345,100
WTR YR 1976: TOTAL 201,271.9 MEAN 550 MAX 1,730 MIN 2.5 AC-FT 399,200
DO.....: MEAN‡ 465 CFSM‡ 8.50 IN.‡ 115.76 AC-FT‡ 337,700

† Change in contents, in acre-feet, in Keechelus Lake.
‡ Adjusted for change in contents, in Keechelus Lake.

12476000 KACHESS RIVER NEAR EASTON, WA

LOCATION.--Lat 47°15'41", long 121°12'08", on north line sec.3, T.20 N., R.13 E., Kittitas County, Hydrologic Unit 17030001, on left bank 0.3 mi (0.5 km) downstream from Kachess Lake, 2.0 mi (3.2 km) northwest of Easton, and at mile 0.6 (1.0 km).

DRAINAGE AREA.--63.6 mi² (164.7 km²)

PERIOD OF RECORD.--October 1903 to current year.

REVISED RECORDS.--WSP 369: 1904, 1907-8. WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,188.10 ft (666.933) above mean sea level (Bureau of Reclamation bench mark). Prior to July 22, 1913, nonrecording gage and July 22, 1913, to Aug. 14, 1916, water-stage recorder, at site 0.2 mi (0.3 km) upstream at different datum. Aug. 15, 1916, to Oct. 8, 1927, water-stage recorder at site 0.5 mi (0.8 km) downstream at different datum. Oct. 9, 1927, to Oct. 30, 1951, water-stage recorder at present site at datum 1.33 ft (0.405 m) higher.

REMARKS.--Records excellent. Flow completely regulated by Kachess Lake.

COOPERATION.--Gage-height record, 8 discharge measurements, and records of daily discharge furnished by Bureau of Reclamation; 3 discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--73 years, 295 ft³/s (8.354 m³/s), 213,700 acre-ft/yr (263 hm³/yr), adjusted for storage since October 1905.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,060 ft³/s (86.7 m³/s) Apr. 10, 1972, gage height, 8.57 ft (2.612 m); no flow at times when gates in dam are closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft³/s (38.5 m³/s) Dec. 17, gage height, 6.44 ft (1.963 m); minimum, 1.7 ft³/s (0.048 m³/s) Nov. 22, gage height, 2.46 ft (0.750 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	805	3.6	11	475	475	126	58	427	326	598	172	188
2	785	3.8	27	475	475	126	58	431	173	598	331	185
3	756	3.6	74	475	475	126	58	431	39	598	487	182
4	735	3.4	92	475	475	126	60	431	38	594	483	194
5	735	3.4	472	475	471	126	60	605	38	594	483	403
6	705	3.4	755	475	467	126	64	735	38	540	269	395
7	632	3.6	755	475	463	126	65	735	99	487	208	391
8	598	3.8	1060	475	463	126	71	745	142	487	208	468
9	563	3.6	1280	471	463	124	71	750	142	487	208	621
10	524	3.4	1260	471	463	124	72	905	140	483	205	705
11	513	3.2	1260	471	459	126	77	995	142	483	208	700
12	513	3.0	1240	471	335	124	78	995	140	689	210	700
13	508	3.0	1240	467	264	124	80	995	140	1020	208	838
14	204	3.0	1230	467	264	124	80	984	140	1010	208	940
15	4.3	3.6	1220	475	264	124	181	984	140	995	208	934
16	4.3	3.6	1260	483	264	124	261	978	347	699	208	929
17	3.8	3.2	1320	483	264	124	261	978	491	284	200	1070
18	3.8	2.9	1320	483	264	75	261	973	495	284	198	1170
19	4.3	2.9	1310	483	264	41	261	978	495	284	198	1160
20	4.0	2.7	1300	483	267	43	261	962	500	210	195	1150
21	4.0	2.5	1280	483	267	46	261	962	544	50	195	1150
22	4.0	2.1	618	483	264	47	261	962	585	49	192	1150
23	3.8	1.9	125	483	185	48	261	956	580	49	192	1140
24	4.0	3.2	192	479	124	53	261	782	576	49	192	1130
25	4.3	3.2	192	475	124	54	261	665	576	49	190	1130
26	4.3	7.0	198	475	124	55	261	670	572	48	190	1120
27	4.0	4.6	205	479	124	57	264	451	567	48	190	1120
28	3.8	3.4	205	483	126	58	356	316	567	48	190	1110
29	3.8	2.9	205	483	126	58	427	319	594	48	188	1100
30	3.8	3.2	344	483	---	58	427	322	603	126	188	1100
31	3.8	---	479	479	---	58	---	322	---	172	188	---
TOTAL	8644.1	100.7	22529	14793	9063	2877	5478	22744	9969	12160	7190	24573
MEAN	279	3.36	727	477	313	92.8	183	734	332	392	232	819
MAX	805	7.0	1320	483	475	126	427	995	603	1020	487	1170
MIN	3.8	1.9	11	467	124	41	58	316	38	48	172	182
AC-FT	17150	200	44690	29340	17980	5710	10870	45110	19770	24120	14260	48740
†	-6,960	+29,410	+18,120	-520	-2,610	+3,650	+11,070	+7,950	+14,520	-2,820	-4,560	-47,380
MEAN‡	166	498	1,021	469	267	152	369	863	576	346	158	22.9
CFSM‡	2.61	7.83	16.05	7.37	4.20	2.39	5.80	13.57	9.06	5.44	2.48	.36
IN.†	3.00	8.73	18.52	8.50	4.53	2.76	6.47	15.64	10.11	6.28	2.86	.40
AC-FT‡	10,190	29,610	62,810	28,820	15,370	9,360	21,940	53,060	34,290	21,300	9,700	1,360

CAL YR 1975: TOTAL 108,150.6 MEAN 296 MAX 1,320 MIN 1.9 AC-FT 214,500
DO.....: MEAN‡ 423 CFSM‡ 6.65 IN.‡ 90.36 AC-FT‡ 306,500
WTR YR 1976: TOTAL 140,120.8 MEAN 383 MAX 1,320 MIN 1.9 AC-FT 277,900
DO.....: MEAN‡ 410 CFSM‡ 6.45 IN.‡ 87.79 AC-FT‡ 297,800

† Change in contents, in acre-feet, in Kachess Lake.
‡ Adjusted for change in contents in Kachess Lake.

12479000 CLE ELUM RIVER NEAR ROSLYN, WA

LOCATION.--Lat 47°14'41", long 121°04'00", in NW¼NW¼ sec.11, T.20 N., R.14 E., Kittitas County, Hydrologic Unit 17030001, on left bank 0.3 mi (0.5 km) downstream from dam at Cle Elum Lake, 3.4 mi (5.5 km) northwest of Roslyn, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--203 mi² (526 km²).

PERIOD OF RECORD.--October 1903 to current year.

REVISED RECORDS.--WSP 369: 1906-8. WSP 1216: Drainage area. WSP 1286: 1908-9. WSP 1316: 1904.

GAGE.--Water-stage recorder. Datum of gage is 2,102.10 ft (640.720 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Oct. 14, 1913, and Sept. 4, 1931, to Apr. 19, 1933, several nonrecording gages and Oct. 14, 1913, to Sept. 3, 1931, water-stage recorder, at about same sites at same datum.

REMARKS.--Records excellent. No diversion above station. Flow regulated by Cle Elum Lake 0.3 mi (0.5 km) upstream.

COOPERATION.--Gage-height record, 7 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 2 discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--73 years, 939 ft³/s (26.59 m³/s), 680,300 acre-ft/yr (839 hm³/yr), adjusted for storage since 1906.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,700 ft³/s (530 m³/s) Nov. 15, 1906, gage height, 14.05 ft (4.282 m); no flow at times when gates in dam are closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,060 ft³/s (86.7 m³/s) July 8, gage height, 8.91 ft (2.716 m); minimum, 0.85 ft³/s (0.024 m³/s) Nov. 23, gage height, 3.68 ft (1.122 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1120	39	5.5	2920	896	85	1160	1150	2050	2020	2040	1420
2	1090	39	14	2900	896	85	1160	1160	1610	2010	2030	1420
3	1030	40	12	2870	896	85	1160	1160	974	2000	2030	1580
4	968	42	10	2860	896	85	1160	1170	1150	2000	1910	1660
5	968	42	5.5	2860	629	85	1160	1170	1460	1990	1770	1650
6	968	42	4.9	2840	488	85	1160	1180	1460	2000	1760	1650
7	845	44	4.4	2830	488	85	1150	1180	1430	2020	1770	1640
8	714	44	4.9	1450	488	85	1150	1140	1320	2710	1770	1640
9	714	44	4.9	860	479	88	1150	1190	1280	3040	1550	1580
10	709	44	33	860	437	88	1150	1200	1150	3030	1230	1500
11	709	44	329	860	239	88	1150	1210	854	3000	1230	1490
12	709	44	667	854	226	88	1160	1210	896	2950	1230	1490
13	709	44	831	854	226	88	1160	1220	920	2210	1320	1370
14	607	44	1280	854	226	88	1160	1220	890	1810	1410	1200
15	520	44	1360	854	226	85	1160	1230	802	1760	1420	1190
16	520	44	1090	661	226	300	1160	1230	834	1770	1420	1190
17	520	46	944	62	140	482	1160	1230	860	1740	1420	1180
18	520	14	908	62	90	545	1160	1780	884	1740	1230	1180
19	525	1.0	1390	62	90	540	1160	2060	884	1740	1210	1180
20	182	1.0	1750	597	88	540	1160	2020	854	1710	1170	1210
21	38	1.0	1490	890	88	540	1160	2020	854	1510	1170	1260
22	36	1.0	1860	890	88	545	1160	2020	1210	1600	1170	1260
23	36	1.0	2620	890	88	545	1160	2020	2250	1740	1170	1260
24	36	1.1	2990	890	88	545	1160	2020	2880	1730	1350	1330
25	36	1.1	2990	890	85	675	1150	2070	2810	1730	1430	1440
26	36	1.1	2980	890	85	1160	1150	2080	2790	1720	1430	1440
27	36	1.1	2960	890	88	1160	1160	2110	2760	1730	1430	1430
28	36	1.0	2950	896	85	1160	1150	2160	2450	1850	1430	1430
29	36	1.1	2940	896	88	1160	1150	2180	2000	2050	1430	1420
30	38	2.4	2930	896	---	1160	1150	2170	2020	2050	1430	1420
31	39	---	2930	896	---	1160	---	2140	---	2040	1420	---
TOTAL	15050	757.9	40288.1	38784	9153	13510	34700	49140	44586	63000	45780	42110
MEAN	485	25.3	1300	1251	316	436	1157	1585	1486	2032	1477	1404
MAX	1120	46	2990	2920	896	1160	1160	2180	2880	3040	2040	1660
MIN	36	1.0	4.4	62	85	85	1150	1150	802	1510	1170	1180
AC-FT	29850	1500	79910	76930	18150	26800	68830	97470	88440	125000	90800	83530
†	-4,490	+66,470	+69,430	-14,360	+18,960	-6,380	-13,250	+78,260	+50,210	-10,440	-37,250	-60,380
MEAN‡	412	1,142	2,428	1,018	645	332	934	2,857	2,329	1,864	871	389
CFSM‡	2.03	5.63	11.96	5.01	3.18	1.64	4.60	14.07	11.47	9.18	4.29	1.92
IN.‡	2.34	6.28	13.80	5.78	3.43	1.89	5.14	16.23	12.81	10.59	4.95	2.14
AC-FT‡	25,360	67,970	149,300	62,570	37,110	20,420	55,580	175,700	138,600	114,600	53,550	23,150

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CAL YR 1975:  TOTAL  440,731.0   MEAN  1,207    MAX  3,570    MIN  1.0    AC-FT  874,200
     DO.....:  MEAN‡       1,227   CFSM‡  6.04    IN.‡ 82.05    AC-FT‡  888,000
WTR YR 1976:  TOTAL  396,859.0   MEAN  1,084    MAX  3,040    MIN  1.0    AC-FT  787,200
     DO....:   MEAN‡       1,273   CFSM‡  6.27    IN.‡ 85.38    AC-FT‡  924,000
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† Change in contents, in acre-feet, in Cle Elum Lake.
‡ Adjusted for change in contents in Cle Elum Lake.

12479500 YAKIMA RIVER AT CLE ELUM, WA.

LOCATION.--47°11'33", long 120°56'48", in SW¼SE¼ sec.27, T.20 N., R.15 E., Kittitas County, Hydrologic Unit 17030001, on right bank 300 ft (91 m) downstream from highway bridge at Cle Elum, 0.1 mi (0.2 km) downstream from Crystal Creek (formerly Roslyn Creek), 1.3 mi (2.1 km) downstream from Tillman Creek, 7.0 mi (11.3 km) upstream from Teanaway River, and at mile 183.1 (294.6 km).

DRAINAGE AREA.--495 mi² (1,282 km²).

PERIOD OF RECORD.--August 1906 to current year. Chemical analyses February 1910 to January 1911, December 1952 to September 1956, July 1969 to September 1970. Water temperature December 1952 to September 1956.

REVISED RECORDS.--WSP 369: 1910-11. WSP 832: 1936. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,900 ft (579 m), from topographic map. Prior to July 12, 1911, June 28, 1923, to Oct. 21, 1924, Nov. 13, 1964, to Sept. 30, 1968, Oct. 1, 1969 to Sept. 1971, non-recording gage, and July 12, 1911, to June 27, 1923, Oct. 22, 1924, to Nov. 12, 1964, Oct. 1, 1968 to Sept. 30, 1969, water-stage recorder, all at various locations within 500 ft (150 m) of present site at different datums.

REMARKS.--Records good. Kittitas high-line canal diverts water from river at Easton 19.5 mi (31.4 km) upstream for irrigation below station. Several smaller diversions for irrigation of several hundred acres above station. Considerable regulation by Keechelus, Kachess, and Cle Elum Lakes.

COOPERATION.--Gage-height record collected in cooperation with and 4 discharge measurements furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--70 years, 2,052 ft³/s (58.11 m³/s), 56.30 in/yr (1,430 mm/yr), 1,487,000 acre-ft/yr (1,830 hm³/yr), adjusted for storage since October 1906 and Kittitas Canal diversion since 1930.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft³/s (725 m³/s) Nov. 14, 1906, gage height, 12.5 ft (3.81 m) from floodmarks, datum then in use; minimum, 34 ft³/s (0.96 m³/s) Oct. 27, 28, 29, 1973, gage height, 2.57 ft (0.783 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,460 ft³/s (268 m³/s) Dec. 3, gage height, 6.67 ft (2.033 m); minimum, 426 ft³/s (12.1 m³/s) Oct. 28, gage height, 3.04 ft (0.927 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1600	600	3150	5680	2830	798	2590	2500	3120	2640	2610	1920
2	1430	620	8040	5460	2780	786	2590	3230	2470	2610	2630	1860
3	1420	804	8730	5380	2760	834	2590	3270	1730	2540	2900	1920
4	1350	858	7920	5310	2710	831	2640	3050	1730	2500	2870	1940
5	1340	834	5090	5240	2240	815	2610	2780	2100	2680	2520	2020
6	1350	798	4020	5140	1710	822	2960	2830	2100	2540	2230	2000
7	1260	786	3580	5040	1620	822	3020	2920	2150	2430	2410	1940
8	1110	786	3470	3810	1530	822	3430	3250	2130	2870	2360	1900
9	1110	762	4090	2660	1420	834	3720	3660	2150	3580	2150	1880
10	1110	739	4090	2610	1350	870	3690	3930	1960	3520	1800	1900
11	1130	657	4250	2610	1370	896	4020	3990	1760	3440	1800	1840
12	1110	540	4440	2540	1470	870	4020	3670	1750	3380	2150	1780
13	1110	495	4570	2500	1350	870	3810	3380	1710	2720	2250	1700
14	1080	459	4970	2570	1280	858	3660	3380	1640	2060	2390	1620
15	1130	560	5070	3150	1230	858	3550	3230	1540	2020	2390	1570
16	1170	628	4570	4360	1240	949	3520	3150	1740	1840	2340	1520
17	1170	651	4370	3280	1200	1050	3410	3200	1960	2060	2320	1520
18	1130	600	4210	2290	1100	1100	3190	3450	1690	2100	2130	1660
19	1080	550	4780	1860	1070	1100	2200	3610	1750	2040	2000	1660
20	769	531	4970	2080	1040	1070	3280	3470	1690	2000	2060	1640
21	504	531	4470	2210	1010	1010	3000	3480	1660	2300	2000	1620
22	477	531	4630	2190	1000	1010	2920	4370	1910	2320	1940	1550
23	450	540	4570	2760	987	961	2880	4530	2820	2480	1880	1520
24	442	841	4970	2780	896	1030	2880	4410	3650	2450	1970	1550
25	459	1280	4870	2730	870	1090	2830	4180	3750	2390	2040	1670
26	450	1520	5460	2710	846	1550	2660	4090	3660	2320	2020	1670
27	442	1430	5500	3180	834	1550	1940	4050	3520	2340	2170	1660
28	434	1140	5310	3180	822	1550	1920	3780	3220	2410	2130	1640
29	442	987	5570	3050	798	1520	2130	3690	2690	2590	2060	1620
30	472	922	5860	2980	---	2260	2320	3580	2640	2590	1980	1620
31	580	---	5860	2920	---	2610	---	3460	---	2640	2000	---
TOTAL	29111	22980	155450	104260	41363	33996	89980	109350	68380	78400	68500	51910
MEAN	939	766	5015	3363	1426	1097	2999	3527	2279	2529	2210	1730
MAX	1600	1520	8730	5680	2830	2610	4020	4530	3750	3580	2900	2020
MIN	434	459	3150	1860	798	786	1920	2500	1540	1840	1800	1520
AC-FT	57740	45580	308300	206800	82040	67430	178500	216900	135600	155500	135900	103000
†	-4,930	+132,650	+104,300	-29,400	+23,010	+900	-24,660	+123,980	+58,540	-46,400	-116,370	-126,500
††	20,990	0	0	0	0	0	8,370	51,860	57,860	63,550	60,950	54,940
MEAN‡	1,200	2,995	6,710	2,885	1,825	1,111	2,726	6,386	4,235	2,807	1,309	528
CFSM‡	2.42	6.05	13.56	5.83	3.69	2.24	5.51	12.90	8.56	5.67	2.64	1.07
IN.‡	2.80	6.75	15.64	6.72	3.98	2.59	6.15	14.88	9.55	6.54	3.05	1.19
AC-FT‡	73,800	178,200	412,600	177,400	105,000	68,330	162,200	392,700	252,000	172,600	80,480	31,440

CAL YR 1975: TOTAL 832,234 MEAN 2,280 MAX 8,730 MIN 407 AC-FT 1,651,000
DO.....: MEAN‡ 2,874 CFSM‡ 5.81 IN.‡ 78.87 AC-FT‡ 2,081,000
WTR YR 1976: TOTAL 853,680 MEAN 2,332 MAX 8,730 MIN 434 AC-FT 1,693,000
DO.....: MEAN‡ 2,902 CFSM‡ 5.86 IN.‡ 79.86 AC-FT‡ 2,107,000

† Change in contents, in acre-feet, for Keechelus, Kachess, and Cle Elum Lakes.
†† Diversion, in acre-feet, by Kittitas Canal.
‡ Adjusted for change in lake contents and diversion.

12483800 NANEUM CREEK NEAR ELLENSBURG, WA

LOCATION.--Lat 47°07'37", long 120°28'47", in SE¼NE¼ sec.20, T.19 N., R.19 E., Kittitas County, Hydrologic Unit 17030001, on right bank 10 ft (3.0 m) upstream from intake of Ellensburg water-supply system, 9 mi (14 km) north of Ellensburg, and at mile 0.6 (1.0 km), corrected.

DRAINAGE AREA.--69.5 mi^2 (180.0 km^2).

PERIOD OF RECORD.--March 1957 to September 1971, September 1972 to current year.

REVISED RECORDS.--WSP 1566: Drainage area. WRD Wash. 1974: 1973(M).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,480 ft (756 m), from topographic map.

REMARKS.--Records fair except those for winter periods, which are poor. Small diversion above station for irrigation.

AVERAGE DISCHARGE.--18 years(water years 1958-71, 1973-76), 58.3 ft^3/s (1.651 m^3/s), 11.39 in/yr (289 mm/yr), 42,240 acre-ft/yr (52.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 968 ft^3/s (27.4 m^3/s) June 9, 1964, gage height, 4.08 ft (1.244 m); minimum observed, less than 5 ft^2/s (0.14 m^3/s) Nov. 29, 1957, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 4	0730	316	8.95	2.05	0.625	June 11	0030	186	5.41	1.53	0.466
May 10	2100	*464	13.1	*2.58	0.786						

Minimum daily discharge, 18 ft^3/s (0.51 m^3/s) Nov. 19, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	28	61	42	55	44	50	132	182	114	42	26
2	20	28	146	42	53	44	46	189	169	105	43	26
3	21	32	212	44	51	23	48	218	154	102	39	25
4	23	35	253	44	51	22	56	207	144	103	39	25
5	21	35	164	43	48	22	69	212	136	98	41	24
6	21	35	132	46	47	24	83	214	134	105	42	24
7	21	32	114	48	48	27	93	247	136	96	52	24
8	21	30	112	47	50	31	95	293	142	109	48	24
9	27	28	127	42	52	36	110	344	156	95	43	24
10	32	28	119	40	55	42	121	437	177	90	39	24
11	27	28	110	42	57	41	142	404	186	83	37	23
12	25	25	100	42	61	36	144	388	180	78	36	23
13	24	26	90	42	57	37	133	410	166	75	35	23
14	24	29	72	45	54	37	121	366	150	72	35	24
15	24	45	74	49	51	36	114	367	152	69	42	24
16	24	33	75	77	53	39	107	377	160	65	42	24
17	25	24	62	75	52	43	103	374	166	64	38	23
18	24	19	52	74	49	46	102	300	166	62	36	23
19	24	18	48	57	47	45	102	280	173	61	34	22
20	24	20	45	58	45	45	109	256	169	59	34	21
21	27	22	43	54	45	43	102	244	167	57	32	21
22	25	24	43	50	45	44	98	242	156	57	30	21
23	24	26	46	52	45	43	96	247	144	56	30	22
24	24	32	49	52	44	44	95	252	136	52	29	23
25	27	29	52	51	44	42	93	242	131	51	33	22
26	24	32	49	59	44	42	91	237	123	46	31	21
27	24	30	49	71	43	41	95	247	116	44	29	21
28	25	26	49	66	43	41	98	240	110	43	29	21
29	29	23	50	65	43	39	100	232	118	43	28	21
30	28	21	51	66	---	43	110	214	119	42	28	20
31	28	---	51	60	---	53	---	200	---	39	27	---
TOTAL	757	842	2700	1662	1431	1199	2916	8592	4514	2234	1123	689
MEAN	24.4	28.1	87.1	53.6	49.3	38.7	97.2	277	150	72.1	36.2	23.0
MAX	32	45	253	77	61	53	144	437	186	114	52	26
MIN	20	18	43	40	43	22	46	132	110	39	27	20
AC-FT	1500	1670	5360	3300	2840	2380	5780	17040	8950	4430	2230	1370

CAL YR 1975 TOTAL 24813 MEAN 68.0 MAX 390 MIN 18 AC-FT 49220
WTR YR 1976 TOTAL 28659 MEAN 78.3 MAX 437 MIN 18 AC-FT 56850

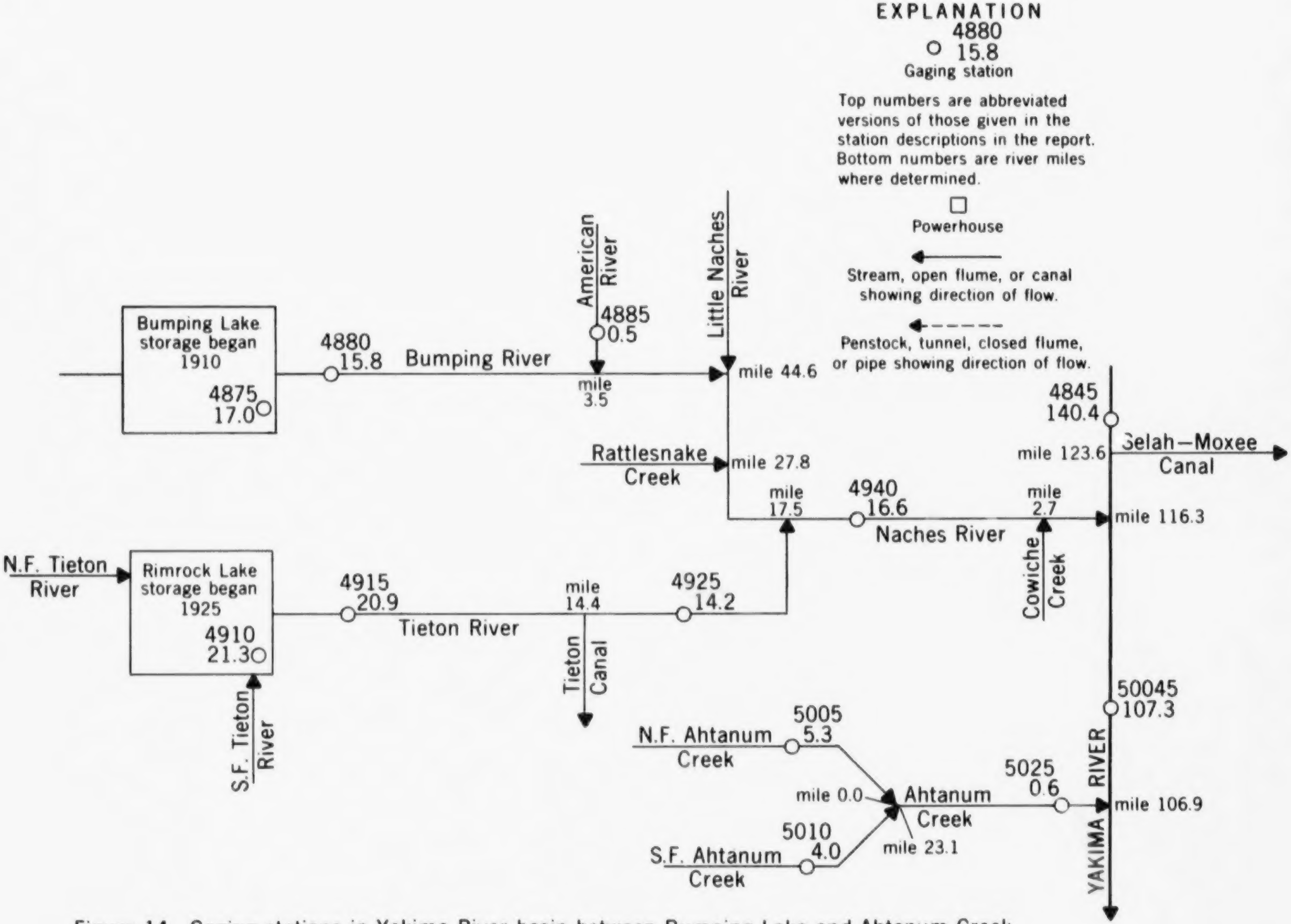
EXPLANATION
4880
15.8
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
Bumping Lake storage began 1910
4875
17.0
4880
15.8
Bumping River
American River
4885
0.5
mile 3.5
Little Naches River
mile 44.6
Rattlesnake Creek
mile 27.8
mile 17.5
4940
16.6
Naches River
mile 2.7
Cowiche Creek
4845
140.4
mile 123.6
Selah—Moxee Canal
mile 116.3
N.F. Tieton River
Rimrock Lake storage began 1925
4910
21.3
S.F. Tieton River
4915
20.9
Tieton River
mile 14.4
Tieton Canal
4925
14.2
50045
107.3
N.F. Ahtanum Creek
5005
5.3
mile 0.0
Ahtanum Creek
mile 23.1
5010
4.0
S.F. Ahtanum Creek
5025
0.6
mile 106.9
YAKIMA RIVER

Figure 14. Gaging stations in Yakima River basin between Bumping Lake and Ahtanum Creek.

12484500 YAKIMA RIVER AT UMTANUM, WA

LOCATION.--Lat 46°51'46", long 120°28'44", in SW¼NW¼ sec.20, T.16 N., R.19 E., Kittitas County, Hydrologic Unit 17030001, on right bank at Umtanum railway siding, 0.5 mi (0.8 km) upstream from Umtanum Creek, 4.2 mi (6.8 km) upstream from McPherson Canyon, 10 mi (16 km) south of Ellensburg, and at mile 140.4 (225.9 km).

DRAINAGE AREA.--1,594 mi^2 (4,128 km^2).

PERIOD OF RECORD.--August 1906 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 412: 1914. WSP 1286: 1910. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,300.00 ft (396.240 m) above mean sea level. Prior to Sept. 28, 1911, nonrecording gage at approximately same site at various datums. Sept. 28, 1911, to Nov. 23, 1936, water-stage recorder at site about 300 ft (91 m) upstream at datum 26.70 ft (8.138 m) higher.

REMARKS.--Records excellent. Flow partly regulated by Keechelus, Kachess, and Cle Elum Lakes. Diversions above station for irrigation of about 105,000 acres (420 km^2).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,000 ft^3/s (1,160 m^3/s) Nov. 15 or 16, 1906, gage height, 41.1 ft (12.53 m), from floodmarks, present datum; minimum recorded, 138 ft^3/s (3.91 m^3/s) Oct. 3, 1915, gage height, 2.86 ft (0.872 m), datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,600 ft^3/s (470 m^3/s) Dec. 3, gage height, 36.50 ft (11.125 m); minimum, 800 ft^3/s (22.7 m^3/s) Oct. 28, gage height, 30.62 ft (9.333 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2130	1010	2270	6550	4690	1370	3740	6530	4670	3740	3200	2660
2	1990	1040	10000	6340	4560	1360	3720	5840	4220	3690	3450	2550
3	1980	1200	14500	6270	4450	1240	3700	6780	3140	3640	3590	2550
4	1960	1530	14600	6230	4280	1220	3830	6000	2850	3670	3620	2680
5	1960	1560	11600	6140	3940	1180	4110	5360	3020	3650	3450	2700
6	1940	1470	8060	5990	3200	1230	4880	5190	3170	3600	3150	2800
7	2050	1410	6760	5930	2750	1270	5250	5290	3200	3520	3590	2770
8	1850	1310	6180	5580	2660	1230	5530	5930	3260	3860	3700	2660
9	1760	1240	7030	4000	2620	1300	6630	6950	3630	4600	3670	2640
10	1880	1140	7090	3740	2520	1730	6530	7430	3520	4520	2990	2640
11	1850	1120	6610	3740	2280	1730	7070	7300	3230	4540	2840	2630
12	1800	999	6440	3640	2630	1570	7330	6340	3120	4460	2920	2590
13	1780	907	6330	3510	2670	1550	6820	5990	3010	4170	3030	2540
14	1780	857	6190	3560	2430	1540	6280	6190	2850	3240	3210	2430
15	1750	938	6350	4060	2290	1520	5880	5880	2630	2930	3340	2410
16	1630	1390	6130	7020	2320	1570	5470	5610	2860	2790	3480	2340
17	1610	1310	5610	7080	2360	1900	5170	5700	3370	2680	3410	2320
18	1550	1190	5390	5940	2190	2210	4980	5410	3360	2730	3290	2430
19	1500	1070	5210	4680	2030	2300	4060	5600	3240	2710	3020	2480
20	1460	1020	5910	4070	1920	2220	4600	5260	3220	2590	3080	2480
21	1140	962	5570	4240	1830	2150	4790	4950	3070	2720	3010	2470
22	1010	937	5630	4020	1780	2090	4630	5380	2940	2760	2870	2350
23	914	961	5200	4180	1750	2020	4540	5870	3450	2920	2750	2350
24	864	1010	5660	4340	1690	2050	4380	6010	4520	2930	2640	2320
25	870	1890	5700	4260	1610	2180	4430	5680	4560	2920	2890	2430
26	912	2160	5750	4160	1590	2420	4240	5440	4490	2890	2870	2430
27	867	2480	6410	4610	1590	2630	3740	5540	4330	2790	2930	2420
28	811	2070	6170	5410	1520	2640	3520	5470	4270	2730	2960	2390
29	817	1680	6210	5170	1430	2580	3740	5260	3680	2940	2890	2330
30	873	1520	6770	4980	---	2850	4120	5140	3700	3010	2820	2290
31	937	---	6800	4820	---	3690	---	4920	---	3070	2730	---
TOTAL	46255	39381	213900	154600	73580	58540	147710	178260	104380	103010	97190	75080
MEAN	1492	1313	6900	4981	2537	1888	4924	5750	3479	3323	3135	2503
MAX	2130	2480	14600	7080	4690	3690	7330	7430	4670	4600	3700	2800
MIN	811	857	2270	3510	1430	1180	3520	4530	2630	2590	2640	2290
AC-FT	91750	78110	424300	306300	145900	116100	293000	353500	207000	204300	192800	148900

CAL YR 1975 TOTAL 1217720 MEAN 3336 MAX 14600 MIN 799 AC-FT 2415000
WTR YR 1976 TOTAL 1291666 MEAN 3529 MAX 14600 MIN 811 AC-FT 2562000

12488000 BUMPING RIVER NEAR NILE, WA

LOCATION.--Lat 46°52'48", long 121°16'52", in NE¼ sec.13, T.16 N., R.12 E. (unsurveyed), Yakima County, Hydrologic Unit 17030002, Snoqualmie National Forest, on right bank 1.2 mi (1.9 km) downstream from spillway of Bumping Lake Dam, 1.3 mi (2.1 km) southwest of Gooseprairie post office, 8.6 mi (13.8 km) southwest of town of American River, 15.8 mi (25.4 km) west of Nile, and at mile 15.8 (25.4 km).

DRAINAGE AREA.--70.7 mi² (183.1 km²).

PERIOD OF RECORD.--June to July 1906, April 1909 to current year. Water temperatures October 1970 to May 1971.

REVISED RECORDS.--WSP 369: 1911. WSP 1286: 1911. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,330 ft (1,015 m), from topographic map. Prior to June 13, 1913, nonrecording gages at several sites within 1.3 mi (2.1 km) upstream of present site at different datums. June 13, 1913 to September 30, 1972, water-stage recorder at site 0.8 mi (1.3 km) upstream at different datum.

REMARKS.--Records excellent. Flow completely regulated by dam at Bumping Lake.

COOPERATION.--Gage-height record, 7 discharge measurements, and records of daily discharge furnished by Bureau of Reclamation; 3 discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--67 years (water years 1910-76), 298 ft³/s (8.439 m³/s), 215,900 acre-ft/yr (266 hm³/yr), adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,180 ft³/s (147 m³/s) Dec. 29, 1917, gage height, 9.33 ft (2.844 m), site and datum then in use; practically no flow when gates in outlet conduit are closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,340 ft³/s (37.9 m³/s) July 8, gage height, 4.39 ft (1.338 m); minimum, 93 ft³/s (2.63 m³/s) June 6, 7, gage height, 2.18 ft (0.664 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244	155	286	470	309	198	118	195	659	855	425	440
2	230	160	491	455	305	192	115	220	652	799	349	435
3	220	168	816	440	301	189	113	244	645	771	313	430
4	212	183	1020	430	297	186	113	265	362	771	309	425
5	202	192	1030	425	285	183	113	293	95	799	305	420
6	195	209	1030	410	281	180	118	313	93	875	305	420
7	189	220	1010	395	273	177	118	341	211	1080	333	415
8	183	226	986	386	269	171	122	381	345	1280	350	415
9	177	226	970	372	265	168	125	440	350	1250	345	410
10	171	226	954	363	262	165	130	485	358	1050	333	405
11	165	226	938	350	254	160	138	526	363	882	321	400
12	160	226	906	341	254	158	142	556	372	798	347	395
13	155	223	890	333	251	155	145	574	372	729	381	390
14	150	230	869	325	248	152	148	586	372	701	381	627
15	148	248	827	329	244	150	155	610	372	687	390	848
16	142	265	799	337	244	148	155	645	438	701	386	792
17	140	269	757	337	240	142	158	666	694	736	386	736
18	140	273	708	345	237	142	160	659	924	736	386	624
19	140	273	652	345	234	140	160	652	1100	694	381	532
20	140	269	580	345	230	140	168	645	1240	652	376	440
21	140	265	538	345	226	138	168	638	1190	638	376	372
22	140	262	480	341	223	138	171	617	1000	580	376	301
23	140	262	450	333	216	135	171	624	798	550	372	273
24	140	258	425	329	216	135	174	631	741	538	372	251
25	142	254	405	321	212	132	177	624	762	520	368	230
26	142	258	425	313	209	130	174	624	771	490	368	216
27	142	254	455	313	209	128	174	638	722	455	409	202
28	142	254	460	313	206	125	174	645	736	420	455	192
29	148	248	460	317	202	122	177	652	841	501	450	183
30	152	244	470	317	---	120	183	659	890	538	445	177
31	152	---	475	313	---	118	---	659	---	465	445	---
TOTAL	5083	7026	21562	11088	7202	4717	4457	16307	18468	22541	11538	12396
MEAN	164	234	696	358	248	152	149	526	616	727	372	413
MAX	244	273	1030	470	309	198	183	666	1240	1280	455	848
MIN	140	155	286	313	202	118	113	195	93	420	305	177
AC-FT	10080	13940	42770	21990	14290	9360	8840	32340	36630	44710	22890	24590
†	-2,300	+4,190	+4,310	-2,570	-2,930	-3,070	+2,810	+17,560	+10,940	-2,300	-7,160	-17,000
MEAN‡	127	305	766	316	197	102	196	812	799	690	251	128
CFSM‡	1.80	4.31	10.83	4.47	2.79	1.44	2.77	11.49	11.30	9.76	3.55	1.81
IN.‡	2.06	4.81	12.49	5.15	3.01	1.67	3.09	13.23	12.62	11.25	4.09	2.01
AC-FT‡	7,780	18,130	47,080	19,420	11,360	6,290	11,650	49,900	47,570	42,410	15,430	7,590

CAL YR 1975: TOTAL 140,318 MEAN 384 MAX 1,490 MIN 93 AC-FT 278,300
DO.....: MEAN‡ 383 CFSM‡ 5.42 IN.‡ 73.59 AC-FT‡ 277,500
WTR YR 1976: TOTAL 142,385 MEAN 389 MAX 1,280 MIN 93 AC-FT 282,400
DO.....: MEAN‡ 392 CFSM† 5.54 IN.‡ 75.48 AC-FT‡ 284,600

† Change in contents, in acre-feet, in Bumping Lake.
‡ Adjusted for change in contents, in Bumping Lake.

12488500 AMERICAN RIVER NEAR NILE, WA

LOCATION.--Lat 46°58'40", long 121°10'03", in SE¼NW¼ sec.12, T.17 N., R.13 E., Yakima County, Hydrologic Unit 17030002, Snoqualmie National Forest, on right bank 300 ft (91 m) upstream from Bumping Lake Road bridge, 4.9 mi (7.9 km) downstream from Hall Creek, 16.0 mi (25.7 km) northwest of Nile, and at mile 0.5 (0.8 km).

DRAINAGE AREA.--78.9 mi² (204.4 km²).

PERIOD OF RECORD.--April 1909 to March 1912, July to September 1913, June to September 1914, June to September 1915, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1316. Chemical analyses October 1962 to September 1964, water temperatures October 1968 to May 1971.

REVISED RECORDS.--WSP 982: 1940-42. WSP 1216: Drainage area. WSP 1286: 1911.

GAGE.--Water-stage recorder. Datum of gage is 2,700.0 ft (822.96 m) above mean sea level (Washington State Highway Department bench mark). Prior to Sept. 12, 1915, nonrecording gage at site 300 ft (91 m) downstream at different datum. Oct. 12 to Dec. 7, 1939, nonrecording gage at present site and datum.

REMARKS.--Records excellent. No regulation or diversion.

AVERAGE DISCHARGE.--39 years (water years, 1910-11, 1940-76), 250 ft³/s (7.080 m³/s) 43.03 in/yr (1,093 mm/yr) 181,100 acre-ft/yr (223 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,340 ft³/s (94.6 m³/s) Dec. 4, 1975, gage height, 77.37 ft (23.582 m); minimum, 20 ft³/s (0.57 m³/s) Nov. 22, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,340 ft³/s (94.6 m³/s) Dec. 4, gage height, 77.37 ft (23.582 m); minimum, 52 ft³/s (1.47 m³/s) Oct. 1, 2, gage height, 72.24 ft (22.019 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	115	414	335	240	117	96	374	430	555	258	110
2	52	122	889	324	237	102	96	530	390	494	240	107
3	57	181	1620	297	232	95	96	600	359	486	264	102
4	75	218	2660	294	220	91	104	595	342	522	240	99
5	71	228	1380	291	190	93	125	565	328	560	222	96
6	75	246	872	261	165	95	168	530	335	630	240	97
7	70	215	660	243	160	100	170	575	352	707	335	94
8	67	190	565	230	160	104	240	691	414	878	294	90
9	71	170	522	215	165	105	282	894	502	795	240	87
10	88	158	474	208	183	109	285	1060	585	615	220	84
11	78	146	430	201	179	107	321	1020	580	514	210	83
12	72	137	390	192	185	105	324	856	545	502	197	81
13	69	132	356	181	177	104	307	867	502	466	183	80
14	66	181	321	166	168	102	285	918	458	462	174	80
15	70	410	297	285	162	101	264	845	470	462	225	84
16	71	374	276	454	164	101	240	818	540	498	243	80
17	80	300	252	450	160	104	225	828	655	545	194	79
18	93	252	232	434	154	113	213	751	746	522	188	76
19	101	220	217	398	150	112	203	680	818	462	170	75
20	113	201	206	363	143	110	217	605	818	450	168	74
21	107	185	194	335	139	107	206	570	735	426	160	71
22	101	172	188	314	136	107	201	585	660	378	150	71
23	93	164	181	291	132	105	194	630	580	394	143	71
24	86	190	185	270	132	107	206	615	535	418	139	70
25	90	206	190	249	132	104	203	590	518	402	143	69
26	92	215	418	235	129	101	194	545	470	352	143	67
27	87	203	514	279	122	101	201	625	462	338	132	66
28	87	183	414	279	120	97	213	645	506	291	125	65
29	99	164	386	267	123	96	222	585	630	294	120	64
30	137	156	418	255	---	96	276	526	640	276	115	63
31	130	---	374	246	---	99	---	470	---	273	113	---
TOTAL	2602	6034	16495	8842	4759	3190	6377	20988	15905	14967	5988	2435
MEAN	83.9	201	532	285	164	103	213	677	530	483	193	81.2
MAX	137	410	2660	454	240	117	324	1060	818	878	335	110
MIN	52	115	181	166	120	91	96	374	328	273	113	63
CFSM	1.06	2.55	6.74	3.61	2.08	1.31	2.70	8.58	6.72	6.12	2.45	1.03
IN.	1.23	2.84	7.78	4.17	2.24	1.50	3.01	9.90	7.50	7.06	2.82	1.15
AC-FT	5160	11970	32720	17540	9440	6330	12650	41630	31550	29690	11880	4830

CAL YR 1975 TOTAL 112540 MEAN 308 MAX 2660 MIN 50 CFSM 3.90 IN 53.06 AC-FT 223200
WTR YR 1976 TOTAL 108582 MEAN 297 MAX 2660 MIN 52 CFSM 3.76 IN 51.19 AC-FT 215400

RESERVOIRS IN YAKIMA RIVER BASIN, WA

12474000 KEECHELUS LAKE.--Lat 47°19'21", long 121°20'18", in SE¼NE¼ sec.12, T.21 N., R.11 E., Kittitas County, Hydrologic Unit 17030001, Wenatchee National Forest, at dam on Yakima River at outlet of Keechelus Lake, 3.0 mi (4.8 km) northwest of Martin, 10 mi (16 km) northwest of Easton, and at mile 214.5 (345.1 km). DRAINAGE AREA, 54.7 mi^2 (141.7 km^2). PERIOD OF RECORD, January 1906 to current year. GAGE, water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Mar. 24, 1967, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed on natural lake by earth-filled dam completed in 1917; storage began behind crib dam Jan. 12, 1906, behind present dam Aug. 19, 1914. Initial filling of present reservoir June 15, 1920. Usable capacity, 157,800 acre-ft (195 hm^3) between elevation, 2,425.00 ft (739.140 m), invert of gate sill, and 2,517.00 ft (767.182 m), spillway crest. Spillway raised 2 ft (0.6 m) Sept. 12, 1952. Figures given herein represent usable contents. Water is used for irrigation.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 160,940 acre-ft (198 hm^3) June 5, 1969, elevation, 2,518.23 ft (767.557 m); minimum observed, 448 acre-ft (0.552 hm^3) Sept. 6, 12, 13, 1906 (original crib dam); minimum elevation observed, 2,428.30 ft (740.146 m) Sept. 20, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 157,980 acre-ft (195 hm^3) Dec. 5; elevation, 2,517.08 ft (767.206 m); minimum, 9,150 acre-ft (11.3 hm^3) Sept. 20, elevation, 2,432.28 ft (741.359 m).

12475500 KACHESS LAKE.--Lat 47°15'53", long 121°12'16", in SW¼SW¼ sec.34, T.21 N., R.13 E., Kittitas County, Hydrologic Unit 17030001, Wenatchee National Forest, at dam on Kachess River at outlet of Kachess Lake, 2.4 mi (3.9 km) northwest of Easton. DRAINAGE AREA, 63.6 mi^2 (164.7 km^2). PERIOD OF RECORD, September 1905 to current year. GAGE, water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Oct. 28, 1966, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed on natural lake by earth-filled dam completed in 1912. Original crib dam, capacity of 21,000 acre-ft (25.9 hm^3), used Sept. 20, 1905, to June 30, 1911. Storage behind present dam began June 30, 1911. Usable capacity, 239,000 acre-ft (295 hm^3) between elevation, 2,192.75 ft (668.350 m), invert of gate sill, and 2,262.00 ft (689.458 m), top of spillway gate. Figures given herein represent usable contents. Water is used for irrigation.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 244,800 acre-ft (302 hm^3) May 9, 1957, elevation, 2.263.29 ft (689.851 m); minimum observed, 525 acre-ft (0.647 hm^3) Sept. 14, 15, 1910 (original crib dam); minimum elevation observed, 2,197.73 ft (669.868 m) Sept. 25, 27, 1915.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 242,800 acre-ft (299 hm^3) June 21 elevation, 2,262.84 ft (689.714 m); minimum, 151,480 acre-ft (187 hm^3) Oct. 14, elevation, 2,241.47 ft (683.200 m).

12478500 CLE ELUM LAKE.--Lat 47°14'44", long 121°04'24", in NE¼NE¼ sec.10, T.20 N., R.14 E., Kittitas County, Hydrologic Unit 17030001, at dam on Cle Elum River at outlet of Cle Elum Lake, 4.0 mi (6.4 km) northwest of Roslyn, and at mile 8.3 (13.4 km). DRAINAGE AREA, 203 mi^2 (526 km^2). PERIOD OF RECORD, May 1906 to current year. GAGE, water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Mar. 6, 1968, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed on natural lake by earth-filled dam completed in 1933; storage began behind present dam Feb. 26, 1932. Usable capacity, 436,900 acre-ft (539 hm^3) between elevation, 2,110.00 ft (643.128 m), invert of gate sill, and 2,240.00 ft (682.752 m), top of spillway gate. Figures given herein represent usable contents. Water is used for irrigation.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 448,520 acre-ft (551 hm^3) May 8, 9, 1957, elevation, 2,241.98 ft (683.356 m); minimum observed, 2,380 acre-ft (2.93 hm^3) Aug. 31, 1906; minimum elevation observed, 2,114.35 ft (644.454 m) Oct. 14, 1932. Storage was uncontrolled Oct. 3, 1931, to Feb. 26, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 441,430 acre-ft (544 hm^3) July 9, elevation, 2,240.93 ft (683.035 m); minimum, 173,870 acre-ft (214 hm^3) Oct. 17, elevation, 2,176.25 ft (663.321 m).

12487500 BUMPING LAKE.--Lat 46°52'25", long 121°17'57", in SW¼ sec.14 (unsurveyed), T.16 N., R.12 E., Yakima County, Hydrologic Unit 17030002, Snoqualmie National Forest, at dam on Bumping River at outlet of Bumping Lake, 2.2 mi (3.5 km) southwest of Goose Prairie, 10 mi (16 km) southwest of town of American River, 19 mi (31 km) west of Nile, and at mile 17.0 (27.4 km). DRAINAGE AREA, 69.3 mi^2 (179.5 km^2). PERIOD OF RECORD, June to July 1906, April 909 to current year. GAGE, water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Prior to Nov. 23, 1966, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed on natural lake by earth-fill dam completed in 1910; storage began Nov. 3, 1910. Usable capacity, 33,700 acre-ft (41.6 hm^3) between elevation 3,389.00 ft (1,032.967 m), invert of gate sill and 3,426.00 ft (1,044.245 m), spillway crest. Figures given herein represent usable contents. Water is used for irrigation.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 39,840 acre-ft (49.1 hm^3) June 21, 22, 1925, elevation, 3,430.55 ft (1,045.632 m); minimum observed, 1,130 acre-ft (1.39 hm^3) Feb. 5, 6, 7, 8, 9, 1949, elevation, 3,390.80 ft (1,033.516 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 37,180 acre-ft (45.8 hm^3) July 8, elevation, 3,428.61 ft (1,045.040 m); minimum, 4,870 acre-ft (6.00 hm^3) Oct. 18, elevation, 3,396.51 ft (1,035.256 m).

12491000 RIMROCK LAKE.--Lat 46°39'23", long 121°07'43", in NE¼SW¼ sec.31, T.14 N., R.14 E., Yakima County, Hydrologic Unit 17030002, Snoqualmie National Forest, on dam on Tieton River at Rimrock, 0.6 mi (1.0 km) upstream from Wildcat Creek, 7.1 mi (11.4 km) upstream from headworks on Tieton Canal, 21 mi (34 km) west of Naches and at mile 21.3 (34.3 km). DRAINAGE AREA, 187 mi^2 (484 km^2). PERIOD OF RECORD, April 1925 to current year. Prior to October 1959, published as Tieton Reservoir. GAGE, water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation bench mark). Prior to Mar. 14, 1967, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth-fill dam completed in 1925; storage began Apr. 27, 1925. Usable capacity, 198,000 acre-ft (244 hm^3) between elevation 2,766.00 ft (843.077 m), invert of tunnel entrance, and 2,926.00 ft (891.845 m), crest of spillway gates. Figures given herein represent usable contents. Water is used for irrigation.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 201,630 acre-ft (249 hm^3) June 18, 1974, elevation, 2,927.43 ft (892.281 m); minimum observed, 89 acre-ft (0.110 hm^3) Oct. 12, 1926, elevation, 2,766.77 ft (843.311 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 200,180 acre-ft (247 hm^3) July 8, 9, elevation, 2,926.86 ft (892.107 m); minimum, 100,300 acre-ft (124 hm^3) Sept. 30, elevation, 2,879.78 ft (877.757 m).

RESERVOIRS IN YAKIMA RIVER BASIN, WA--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
	12474000 KEECHULUS LAKE			12475500 KACHESS LAKE		
Sept. 30	2,477.01	72,170	-	2,245.24	166,580	-
Oct. 31	2,480.76	78,690	+6,520	2,243.52	159,620	-6,960
Nov. 30	2,499.26	115,460	+36,770	2,250.63	189,030	+29,410
Dec. 31	2,506.62	132,210	+16,750	2,254.84	207,150	+18,120
CAL YR 1975	-	-	+17,910	-	-	+91,980
Jan. 31	2,500.27	117,690	-14,520	2,254.72	206,630	-520
Feb. 29	2,503.23	124,350	+6,660	2,254.12	204,020	-2,610
Mar. 31	2,504.81	127,980	+3,630	2,254.96	207,670	+3,650
Apr. 30	2,494.61	105,500	-22,480	2,257.48	218,740	+11,070
May 31	2,511.22	143,270	+37,770	2,259.27	226,690	+7,950
June 30	2,508.67	137,080	-6,190	2,262.49	241,210	+14,520
July 31	2,493.86	103,940	-33,140	2,261.87	238,390	-2,820
Aug. 31	2,447.84	29,380	-74,560	2,260.86	233,830	-4,560
Sept. 30	2,433.46	10,640	-18,740	2,250.02	186,450	-47,380
WTR YR 1976	-	-	-61,530	-	-	+19,870
	12478500 CLE ELUM LAKE			12487500 BUMPING LAKE		
Sept. 30	2,181.24	191,430	-	3,400.54	7,710	-
Oct. 31	2,179.98	186,940	-4,490	3,397.30	5,410	-2,300
Nov. 30	2,197.78	253,410	+66,470	3,403.04	9,600	+4,190
Dec. 31	2,214.77	322,840	+69,430	3,408.17	13,910	+4,310
CAL YR 1975	-	-	+13,820	-	-	+9,220
Jan. 31	2,211.36	308,480	-14,360	3,405.20	11,340	-2,570
Feb. 29	2,215.85	327,440	+18,960	3,401.48	8,410	-2,930
Mar. 31	2,214.35	321,060	-6,380	3,397.20	5,340	-3,070
Apr. 30	2,211.20	307,810	-13,250	3,401.14	8,150	+2,810
May 31	2,229.15	386,070	+78,260	3,419.52	25,710	+17,560
June 30	2,239.86	436,280	+50,210	3,428.22	36,650	+10,940
July 31	2,237.68	425,840	-10,440	3,426.49	34,350	-2,300
Aug. 31	2,229.70	388,590	-37,250	3,420.52	26,890	-7,460
Sept. 30	2,216.03	328,210	-60,380	3,403.41	9,890	-17,000
WTR YR 1976	- -	-	+136,780	-	-	+2,180
	12491000 RIMROCK LAKE					
Sept. 30	2,892.94	124,720	-			
Oct. 31	2,896.48	131,730	+7,010			
Nov. 30	2,901.85	142,730	+11,000			
Dec. 31	2,901.70	142,420	-310			
CAL YR 1975	-	-	+6,950			
Jan. 31	2,900.46	139,840	-2,580			
Feb. 29	2,904.49	148,290	+8,450			
Mar. 31	2,905.78	151,040	+2,750			
Apr. 30	2,901.22	141,420	-9,620			
May 31	2,917.46	177,210	+35,790			
June 30	2,926.62	199,570	+22.360			
July 31	2,922.10	188,320	-11,250			
Aug. 31	2,904.68	148,690	-39,630			
Sept. 30	2,879.78	100,300	-48,390			
WTR YR 1976	-	-	-24,420			

12491500 TIETON RIVER AT TIETON DAM, NEAR NACHES, WA

LOCATION.--Lat 46°39'46", long 121°07'25", in NW¼NE¼ sec.31, T.14 N., R.14 E., Yakima County, Hydrologic Unit 17030002, Snoqualmie National Forest, on left bank 900 ft (270 m) upstream from Wildcat Creek, 1,200 ft (370 m) downstream from Tieton Dam, 19.0 mi (30.6 km) upstream from Oak Creek, 22 mi (35 km) southwest of Naches, and at mile 20.9 (33.6 km).

DRAINAGE AREA.--187 mi^2 (484 km^2).

PERIOD OF RECORD.--August 1908 to December 1912, June to September 1914, June 1918 to March 1921, April 1925 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "at McAllister Meadows" prior to October 1914 and as "at Rimrock" 1918-19.

REVISED RECORDS.--WSP 369: 1909-10. WSP 1286: 1910, 1928(M), 1935(M). WSP 1316: 1909.

GAGE.--Water-stage recorder. Datum of gage is 2,680.99 ft (817.166 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Oct. 1, 1914, nonrecording gage at site 0.3 mi (0.5 km) upstream at different datum. Oct. 1, 1918, to Mar. 31, 1919, Apr. 27 to Sept. 4, 1925, nonrecording gage, and Sept. 5, 1925, to Apr. 23, 1933, water-stage recorder, at site about 800 ft (240 m) downstream at different datum. Apr. 24, 1933, to Dec. 11, 1934, water-stage recorder at present site at datum 2.0 ft (0.61 m) higher.

REMARKS.--Records excellent except those above 1,500 ft^3/s (42.5 m^3/s), which are good. No diversion above station. Flow regulated by Rimrock Lake 1,200 ft (370 m) upstream beginning April 1925.

COOPERATION.--Gage-height record, 9 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 2 discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--57 years (water years 1909-12, 1919-20, 1926-76), 511 ft^3/s (14.47 m^3/s), 370,200 acre-ft/yr (456 hm^3/yr), adjusted for storage since October 1925.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,450 ft^3/s (239 m^3/s) Dec. 22, 1933, gage height, 9.24 ft (2.816 m), datum then in use; no flow Apr. 4-6, 10, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,520 ft^3/s (71.4 m^3/s) Dec. 18, gage height, 6.16 ft (1.878 m); minimum, 8.4 ft^3/s (0.24 m^3/s) Jan. 19, gage height, 1.58 ft (0.482 m); minimum daily, 40 ft^3/s (1.13 m^3/s) Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	384	52	404	1010	743	109	490	525	871	1190	1280	1230
2	211	52	409	1010	743	109	490	525	480	1080	1280	1230
3	211	52	422	1010	738	109	490	530	465	1040	1260	1260
4	211	52	445	1010	738	109	490	530	427	1070	1230	1320
5	211	52	418	1010	738	109	494	530	376	1130	1280	1320
6	211	52	427	1010	572	109	525	530	376	1190	1280	1380
7	211	52	432	1010	485	110	525	530	379	1280	1280	1380
8	211	52	1340	1010	485	112	530	535	364	1570	1280	1380
9	211	52	2180	1010	402	112	540	535	364	1670	1280	1380
10	211	52	2170	1010	247	211	540	535	360	1360	1280	1370
11	211	52	2160	1010	247	268	540	540	360	1190	1270	1370
12	211	184	2150	804	247	268	540	540	364	1140	1270	1360
13	211	250	2140	682	192	268	716	540	364	1100	1270	1360
14	211	250	2130	682	107	268	1020	540	378	1040	1260	1350
15	211	250	2120	704	106	268	1020	540	339	1010	1260	1190
16	211	250	2100	754	107	268	1020	540	342	1050	1260	1100
17	211	250	2180	365	107	268	1010	545	342	1120	1260	1100
18	211	250	2410	40	106	271	1010	280	342	1120	1140	1100
19	211	253	2460	381	106	271	1010	198	639	1060	1090	1100
20	106	345	2420	622	106	271	1010	613	1360	1120	1090	1100
21	57	396	2390	622	107	271	1010	1250	1490	1050	1090	1090
22	54	396	1150	622	107	271	1000	1250	1390	1250	1080	1090
23	53	396	440	616	107	271	1000	1250	1250	1340	1190	1090
24	53	396	520	616	107	271	1000	1250	1170	1330	1250	1080
25	54	396	520	616	107	271	1000	1090	1100	1320	1250	1080
26	54	396	520	697	107	271	1000	1020	1020	1320	1250	1080
27	54	396	520	743	107	271	683	1030	994	1290	1250	1080
28	53	396	520	743	107	271	525	1030	1010	1290	1250	1080
29	53	396	585	743	109	399	525	1030	1150	1290	1240	1070
30	53	396	836	743	---	490	525	1040	1230	1290	1240	1070
31	52	---	1010	743	---	490	---	1030	---	1280	1240	---
TOTAL	4878	6814	39928	23648	8287	7435	22278	22451	21096	37580	38230	36190
MEAN	157	227	1288	763	286	240	743	724	703	1212	1233	1206
MAX	384	396	2460	1010	743	490	1020	1250	1490	1670	1280	1380
MIN	52	52	404	40	106	109	490	198	339	1010	1080	1070
AC-FT	9680	13520	79200	46910	16440	14750	44190	44530	41840	74540	75830	71780
†	+7,010	+11,000	-310	-2,580	+8,450	+2,750	-9,620	+35,790	+22,360	-11,250	-39,630	-48,390
MEAN‡	271	412	1,283	721	433	285	581	1,306	1,079	1,029	589	393
CFSM‡	1.45	2.20	6.86	3.86	2.32	1.52	3.11	6.98	5.77	5.50	3.15	2.10
IN.‡	1.67	2.46	7.91	4.44	2.50	1.75	3.47	8.05	6.44	6.35	3.63	2.35
AC-FT‡	16,690	24,520	78,890	44,330	24,890	17,500	34,570	80,320	64,200	63,290	36,200	23,390

CAL YR 1975: TOTAL 248,649 MEAN 681 MAX 2,470 MIN 52 AC-FT 493,200
DO.....: MEAN‡ 691 CFSM‡3.70 IN.‡ 50.16 AC-FT‡ 500,200
WTR YR 1976: TOTAL 268,815 MEAN 734 MAX 2,460 MIN 40 AC-FT 533,200
DO.....: MEAN‡ 701 CFSM‡3.75 IN.‡ 51.02 AC-FT‡ 508,800

† Change in contents, in acre-feet, in Rimrock Lake.
‡ Adjusted for change in contents, in Rimrock Lake.

12492500 TIETON RIVER AT HEADWORKS OF TIETON CANAL, NEAR NACHES, WA

LOCATION.--Lat 46°40'16", long 121°00'00", in NE¼SW¼ sec.30, T.14 N., R.15 E., Yakima County, Hydrologic Unit 17030002, Snoqualmie National Forest, on right bank 1,000 ft (300 m) downstream from headworks of Tieton Canal, 7.1 mi (11.4 km) downstream from Tieton Dam, 12.4 mi (20.0 km) upstream from Oak Creek, 16 mi (26 km) southwest of Naches, and at mile 14.2 (22.8 km).

DRAINAGE AREA.--239 mi^2 (619 km^2).

PERIOD OF RECORD.--April 1906 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1286: 1910(M), 1920.

GAGE.--Water-stage recorder. Datum of gage is 2,280.44 ft (695.078 m) above mean sea level, unadjusted. Prior to July 28, 1909, nonrecording gages at same site or sites within 1.5 mi (2.4 km) downstream at same datum.

REMARKS.--Records excellent. Diversion for irrigation by Tieton Canal 1,000 ft (300 m) upstream. Flow regulated by Rimrock Lake 7.1 mi (11.4 km) upstream beginning April 1925.

COOPERATION.--Gage-height record, 9 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 3 discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--70 years, 573 ft^3/s (16.23 m^3/s) 415,100 acre-ft/yr (512 hm^3/yr), adjusted for diversion since 1910 and for storage since October 1924.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,910 ft^3/s (252 m^3/s) Dec. 22, 1933, gage height, 9.70 ft (2.957 m); no flow at times in 1926, 1929, 1931-32, 1934, 1945.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft^3/s (75.0 m^3/s) Dec. 18, gage height, 5.29 ft (1.612 m); minimum, 33 ft^3/s (0.93 m^3/s) May 20, gage height, 1.87 ft (0.570 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	390	76	772	1080	780	143	584	666	651	907	966	906
2	232	74	1010	1070	689	143	584	731	257	794	966	906
3	232	76	909	1060	675	140	591	668	236	745	861	935
4	232	76	1070	1060	731	140	605	619	199	766	642	1000
5	224	74	689	1060	724	140	612	591	134	822	957	1000
6	224	72	570	1060	586	137	696	584	137	894	975	1060
7	224	70	522	1060	504	140	675	605	152	1000	984	1060
8	224	68	1340	1050	514	137	814	652	149	1240	966	1060
9	224	68	2350	1050	489	140	801	675	161	1360	957	1050
10	224	68	2350	1050	332	261	787	633	161	1070	957	1050
11	224	68	2340	1050	332	350	815	564	152	881	957	1050
12	224	157	2340	868	336	350	787	540	146	823	948	1040
13	224	244	2320	717	298	350	870	546	140	780	948	1030
14	224	264	2340	738	176	350	1150	522	174	724	948	1030
15	224	305	2310	843	164	350	1120	492	227	682	980	868
16	224	269	2270	922	173	355	1100	480	130	717	957	766
17	220	256	2370	585	164	375	1070	445	134	794	948	766
18	224	252	2620	220	155	395	1060	154	140	801	834	766
19	224	252	2560	448	152	385	1060	49	370	738	759	759
20	132	332	2580	745	152	380	1080	364	1100	784	759	766
21	66	400	2560	731	152	370	1070	1060	1240	724	759	766
22	66	400	1340	724	152	375	1060	1070	1150	894	752	766
23	66	405	491	710	152	370	1060	1070	999	1020	855	773
24	66	420	577	696	149	370	1060	1060	906	1020	922	780
25	70	420	577	696	149	365	1060	888	832	1010	922	780
26	72	435	633	746	149	365	1090	808	738	1000	922	780
27	68	420	619	801	146	360	830	822	703	984	914	780
28	70	415	598	794	146	355	650	808	717	975	914	787
29	72	410	652	787	146	462	605	801	866	975	914	801
30	74	410	897	780	---	570	619	794	955	975	906	836
31	76	---	1080	780	---	591	---	787	---	966	906	---
TOTAL	5340	7256	45656	25981	9467	9714	25965	20548	14056	27865	27955	26717
MEAN	172	242	1473	838	326	313	866	663	469	899	902	891
MAX	390	435	2620	1080	780	591	1150	1070	1240	1360	984	1060
MIN	66	68	491	220	146	137	584	49	130	682	642	759
AC-FT	10590	14390	90560	51530	18780	19270	51500	40760	27880	55270	55450	52990
†	+7,010	+11,000	-310	-2,580	+8,450	+2,750	-9,620	+35,790	+22,360	-11,250	-39,630	-48,390
††	63	0	853	173	735	23	1,790	15,800	19,110	21,150	21,220	19,450
MEAN ‡	287	427	1,482	799	486	358	734	1,502	1,165	1,060	602	404
CFSM ‡	1.20	1.79	6.20	3.34	2.03	1.50	3.07	6.28	4.87	4.44	2.52	1.69
IN.‡	1.39	1.99	7.15	3.86	2.19	1.73	3.43	7.25	5.44	5.12	2.91	1.89
AC-FT‡	17,660	25,390	91,100	49,120	27,960	22,040	43,670	92,350	69,350	65,170	37,040	24,050

CAL YR 1975:	TOTAL	233,018	MEAN 638	MAX 2,620	MIN 66	AC-FT	462,200
DO.....:	MEAN‡	779	CFSM‡3.26	IN.‡ 44.27	AC-FT‡ 564,000		
WTR YR 1976:	TOTAL	246,520	MEAN 674	MAX 2,620	MIN 49	AC-FT	489,000
DO.....:	MEAN‡	778	CFSM‡3.26	IN.‡ 44.35	AC-FT‡ 564,900		

† Change in contents, in acre-feet, of Rimrock Lake
†† Diversion, in acre-feet, by Tieton Canal
‡ Adjusted for change in lake contents and diversion.

12494000 NACHES RIVER BELOW TIETON RIVER, NEAR NACHES, WA

LOCATION.--Lat 46°44'48", long 120°46'05", in SW¼NE¼ sec.36, T.15 N., R.16 E., Yakima County, Hydrologic Unit 17030002, on left bank 0.4 mi (0.6 km) downstream from Wapatox power canal intake, 0.9 mi (1.4 km) downstream from Tieton River, 3.5 mi (5.6 km) northwest of Naches, and at mile 16.6 (26.7 km).

DRAINAGE AREA.--941 mi^2 (2,437 km^2).

PERIOD OF RECORD.--August to October 1905, October 1908 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1286: 1910(M), 1911, 1929-30(M), 1932-33(M), 1935(M). WSP 1396: 1954.

GAGE.--Water-stage recorder. Datum of gage is 1,549.67 ft (472.339 m) above mean sea level. Prior to Dec. 7, 1916, nonrecording gage and Dec. 7, 1916, to Sept. 9, 1936, water-stage recorder, at site 0.6 mi (1.0 km) upstream at different datums. Sept. 10 to Oct. 30, 1936, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated by Bumping Lake since November 1910 and Rimrock Lake since October 1924. Diversions for municipal water supply for the city of Yakima below the station, by Selah Valley and Tieton Canals since 1909, and Wapatox Canal since 1936. Small unmeasured diversions for irrigation of approximately 420 acres (1.7 km^2) above station. The diversion at Oak Flat was discontinued during the 1975 water year.

COOPERATION.--Gage-height record collected in cooperation with, and two discharge measurement furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--68 years (water years 1909-76), 1,758 ft^3/s (49.79 m^3/s), 1,274,000 acre-ft/yr (1,570 hm^3/yr) adjusted for diversions by Selah Valley, Tieton, City of Yakima water treatment plant, and Wapatox Canals, and for change in contents in Bumping and Rimrock Lakes.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft^3/s (912 m^3/s) Dec. 22, 23, 1933, gage height, 14.33 ft (4.368 m), site and datum then in use; minimum, 1 ft^3/s (0.03 m^3/s) Nov. 7, 1942, and for many days during winter of 1943-44, result of regulation and diversion.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,100 ft^3/s (399 m^3/s) Dec. 4, gage height, 18.40 ft (5.608 m); minimum, 270 ft^3/s (7.65 m^3/s) Oct. 14, 15, gage height, 10.82 ft (3.298 m).

MONTHLY DISCHARGE OF NACHES RIVER AND CANALS NEAR NACHES, WASH.
WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Month	Runoff in acre-feet					Change in contents in Bumping and Rimrock Lakes (acre-feet)	Combined flow of Naches River and canals (acre-feet) (adjusted)
	Naches River near Naches	City of Yakima Diversion (Water treatment plant)	Selah Valley Canal	Tieton Canal	Wapatox Canal		
October............	21,910	978	3,400	63	6,920	+4,710	37,980
November...........	46,060	763	0	0	19,660	+15,190	81,670
December...........	255,000	733	254	853	20,580	+4,000	281,400
CAL YR 1975.....	1,304,000	10,710	43,780	94,870	227,000	+16,170	1,697,000
January............	139,100	702	0	173	17,750	-5,150	152,600
February...........	64,200	649	293	735	13,160	+5,520	84,560
March..............	52,080	746	34	23	8,490	-320	61,050
April..............	129,900	761	2,840	1,790	9,600	-6,810	138,100
May................	242,200	962	7,630	15,800	26,310	+53,350	346,200
June...............	150,900	966	7,840	19,110	20,560	+33,300	232,700
July...............	153,200	1,130	8,110	21,150	20,820	-13,550	190,900
August.............	87,530	1,130	8,070	21,220	15,950	-47,090	86,810
September..........	73,340	1,180	6,940	19,450	16,220	-65,390	51,740
WTR YR 1976.....	1,415,000	10,700	45,410	100,400	196,000	-22,240	1,745,000

12494000 NACHES RIVER BELOW TIETON RIVER, NEAR NACHES, WA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	518	352	2700	2480	1810	1040	1030	2450	2640	3160	1710	1340
2	316	365	8540	2460	1770	722	1010	3650	2090	2780	1650	1330
3	310	466	8600	2440	1730	684	1010	3960	1940	2610	1550	1340
4	325	551	11800	2420	1640	674	1210	3600	1810	2640	1170	1400
5	324	568	8600	2370	1480	674	1450	3560	1220	2770	1380	1400
6	319	600	5570	2300	1390	693	1940	3600	1170	2990	1490	1440
7	310	592	4300	2240	1380	693	2020	3810	1270	3410	1690	1480
8	300	541	4370	2190	1400	674	2730	4580	1680	4140	1650	1460
9	300	508	5460	2140	1380	674	3220	5730	1970	4350	1500	1440
10	321	491	4980	2080	1150	769	3040	6160	2220	3420	1440	1440
11	310	462	4660	2080	1130	876	3370	5650	2240	2850	1400	1420
12	290	472	4490	1900	1160	855	3320	4720	2110	2600	1350	1400
13	280	549	4340	1690	1120	855	3040	4660	1970	2430	1390	1400
14	275	621	4010	1690	993	845	3110	4980	1840	2260	1400	1410
15	300	1180	3860	2010	949	836	2890	4540	1900	2190	1560	1680
16	318	1200	3690	3550	982	845	2670	4280	2020	2190	1710	1520
17	317	988	3600	3440	993	886	2540	4410	2600	2360	1540	1480
18	327	831	3690	2750	939	971	2430	3770	3060	2400	1430	1390
19	435	759	3550	2600	897	982	2160	3230	3630	2220	1280	1290
20	518	884	3440	2660	865	949	2110	2970	4580	2140	1270	1210
21	411	884	3340	2430	845	918	2080	3630	4520	2010	1250	1150
22	394	838	2550	2300	826	907	2040	3620	4050	1970	1210	1130
23	366	817	1670	2180	817	897	1980	3810	3390	2110	1270	1000
24	382	945	1690	2080	817	918	1980	3740	3010	2090	1350	825
25	433	1200	1670	1980	807	897	1980	3490	2850	2080	1350	795
26	464	1280	1950	1970	807	876	1950	3200	2700	1980	1350	775
27	431	1280	2270	2120	788	865	1840	3480	2550	1890	1330	755
28	348	1120	2080	1980	760	855	1710	3560	2600	1800	1380	755
29	332	943	2080	1900	741	886	1710	3320	3080	1750	1380	755
30	390	934	2460	1860	---	993	1940	3090	3370	1860	1360	765
31	383	---	2570	1840	---	1050	---	2850	---	1770	1340	---
TOTAL	11047	23221	128580	70130	32366	26259	65510	122100	76080	77220	44130	36975
MEAN	356	774	4148	2262	1116	847	2184	3939	2536	2491	1424	1233
MAX	518	1280	11800	3550	1810	1050	3370	6160	4580	4350	1710	1680
MIN	275	352	1670	1690	741	674	1010	2450	1170	1750	1170	755
AC-FT	21910	46060	255000	139100	64200	52080	129900	242200	150900	153200	87530	73340
†	+4,710	+15,190	+4,000	-5,150	+5,520	-320	-6,810	+53,350	+33,300	-13,550	-47,090	-65,390
††	11,360	20,420	22,420	18,620	14,840	9,290	14,990	50,700	48,480	51,210	46,370	43,790
MEAN‡	618	1,372	4,576	2,482	1,470	993	2,321	5,630	3,911	3,105	1,412	870
CFSM‡	0.66	1.46	4.86	2.64	1.56	1.06	2.47	5.98	4.16	3.30	1.50	.92
IN.‡	0.76	1.63	5.61	3.04	1.68	1.22	2.75	6.90	4.64	3.80	1.73	1.03
AC-FT‡	37,980	81,670	281,400	152,600	84,560	61,050	138,100	346,200	232,700	190,900	86,810	51,740

CAL YR 1975: TOTAL 657,402 MEAN 1,801 MAX 11,800 MIN 275 AC-FT 1,304,000
DO.....: MEAN‡ 2,344 CFSM‡ 2.49 IN‡ 33.81 AC-FT‡ 1,697,000
WTR YR 1976: TOTAL 713,618 MEAN 1,950 MAX 11,800 MIN 275 AC-FT 1,415,000
DO.....: MEAN‡ 2,410 CFSM‡ 2.56 IN‡ 34.77 AC-FT‡ 1,745,000

† Change in contents, in acre-feet, Bumping and Rimrock Lakes.
†† Diversion, in acre-feet, by Tieton, Selah Valley, and Wapatox Canals, and by city of Yakima.
‡ Adjusted for change in lake contents, and diversion.

12500450 YAKIMA RIVER ABOVE AHTANUM CREEK, AT UNION GAP, WA

LOCATION.--Lat 46°32'04", long 120°27'58", in NW¼NE¼ sec.17, T.12 N., R.19 E., Yakima County, Hydrologic Unit 17030003, on left bank 2,200 ft (670 m) upstream from Ahtanum Creek, 0.8 mi (1.3 km) upstream from Wapato Dam, and 1.4 mi (2.3 km) southeast of Union Gap.

DRAINAGE AREA.--3,479 mi² (9,011 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Apr. 4, 1967, at site 1,200 ft (370 m) downstream at same datum.

REMARKS.--Records excellent. Diversions above station for irrigation of about 212,000 acres (860 km²), 1968. Flow partly regulated by Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes. Records at this site plus those for Ahtanum Creek at Union Gap are equivalent to Yakima River at Union Gap.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,200 ft³/s (799 m³/s) Dec. 4, 1975, elevation, 948.34 ft (289.054 m); minimum daily, 720 ft³/s (20.4 m³/s) Jan. 4, 1971 (result of freezeup).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,200 ft³/s (799 m³/s) Dec. 4, elevation, 948.34 ft (289.054 m); minimum, 1,560 ft³/s (44.2 m³/s) Oct. 24, 28, 29, elevation, 938.34 ft (286.006 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2500	1780	3550	9280	6870	2430	4560	6190	6760	6120	3820	3290
2	2240	1790	16500	8990	6720	2380	4480	8150	5950	5760	4140	3130
3	2130	2000	23300	8820	6560	2230	4440	10300	4800	5400	4180	3050
4	2100	2440	26700	8650	6360	2160	4560	9350	4180	5440	3840	3250
5	2090	2660	22600	8560	5860	2090	4920	8410	3630	5540	4000	3250
6	2120	2640	14300	8320	5340	2140	5880	7790	3680	5620	3960	3430
7	2170	2630	11400	8200	4640	2200	6630	7770	3740	5880	4340	3460
8	2120	2440	10200	8050	4640	1990	7180	8700	4060	6610	4880	3340
9	1990	2300	12100	6780	4620	2070	9320	10800	4580	7840	4400	3250
10	2090	2220	12500	6100	4300	2680	9180	12100	4940	7220	3980	3240
11	2160	2100	11800	6080	3980	3050	9880	12100	4860	6630	3610	3220
12	2060	1990	11300	5860	4140	2840	10500	10400	4620	6280	3460	3180
13	2020	1920	10900	5460	4400	2760	9590	9570	4380	5950	3660	3170
14	1980	1960	10500	5460	4020	2740	9110	10000	4080	4900	3840	3080
15	2000	2340	10500	5820	3720	2500	8460	9570	3800	4320	4040	3370
16	1890	3250	10300	9640	3720	2340	7750	8940	3960	4080	4580	3220
17	1820	3030	9520	11400	3840	2600	7310	9040	4860	4120	4360	3120
18	1810	2770	9420	9400	3680	3150	7000	8410	5540	4220	4200	3080
19	1750	2500	9130	7770	3410	3360	6250	7910	5760	4080	3720	3120
20	2000	2410	9520	7240	3450	3240	6230	7380	6610	3780	3740	3030
21	2030	2440	9320	7090	3120	3170	6720	7570	6720	3720	3680	3000
22	1750	2350	8530	6780	3000	3050	6360	7750	6340	3700	3460	2870
23	1640	2320	7070	6630	2950	2950	6200	8480	5990	4000	3320	2820
24	1590	2370	7200	6800	2920	2790	5800	8750	6390	4060	3270	2800
25	1590	3200	7330	6560	2800	2960	5400	8390	6540	4040	3500	2790
26	1630	3940	7420	6430	2800	2960	5400	7730	6320	3940	3660	2850
27	1630	4500	8700	6630	2770	3360	5400	7910	5970	3700	3640	2800
28	1590	4080	8410	7660	2660	3320	4900	8200	5860	3540	3760	2770
29	1560	3450	8270	7440	2530	3250	4980	7840	5800	3540	3680	2720
30	1640	3100	9200	7240	---	3450	5420	7530	6030	3800	3570	2660
31	1710	---	9620	7050	---	4440	---	7160	---	3820	3390	---
TOTAL	59400	78920	347110	232190	119820	86650	199810	270190	156750	151650	119680	92360
MEAN	1916	2631	11200	7490	4132	2795	6660	8716	5225	4892	3861	3079
MAX	2500	4500	26700	11400	6870	4440	10500	12100	6760	7840	4880	3460
MIN	1560	1780	3550	5460	2530	1990	4440	6190	3630	3540	3270	2660
AC-FT	117800	156500	688500	460500	237700	171900	396300	535900	310900	300800	237400	183200

CAL YR 1975 TOTAL 1881770 MEAN 5156 MAX 26700 MIN 1560 AC-FT 3732000
WTR YR 1976 TOTAL 1914530 MEAN 5231 MAX 26700 MIN 1560 AC-FT 3797000

12500500 NORTH FORK AHTANUM CREEK NEAR TAMPICO, WA

LOCATION.--Lat 46°33'52", long 120°54'57", in SW¼SE¼ sec.35, T.13 N., R.15 E., Yakima County, Hydrologic Unit 17030003, on left bank 150 ft (46 m) downstream from Nasty Creek, 3.2 mi (5.1 km) northwest of Tampico, 20 mi (32.2 km) west of Yakima, and at mile 5.3 (8.5 km).

DRAINAGE AREA.--68.9 mi² (178.5 km²).

PERIOD OF RECORD.--August 1907 to current year (no winter records in water years 1908-09, 1916-30). Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1286: 1910(M), 1914-15.

GAGE.--Water-stage recorder. Concrete control Nov. 11, 1915, to December 1933, and sharp-crested weir since September 1934. Altitude of gage is 2,450 ft (747 m), from topographic map. Aug. 26, 1907, to Apr. 1, 1913, Aug. 20, 1915, to Sept. 5, 1916, nonrecording gage, and Apr. 2, 1913, to Aug. 19, 1915, Sept. 6, 1916, to Sept. 19, 1934, water-stage recorder at site 50 ft (15 m) upstream at different datum.

REMARKS.--Records good except those for winter periods which are fair. Minor diversions. No regulation.

AVERAGE DISCHARGE.--52 years (water years 1910-15, 1931-76), 70.9 ft³/s (2.008 m³/s), 13.97 in/yr (355 mm/yr), 51,370 acre-ft/yr (63.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,580 ft³/s (44.7 m³/s) Jan. 15, 1974, gage height, 5.45 ft (1.661 m) from rating curve extended above 690 ft³/s (19.5 m³/s) on basis of slope-area measurement of peak flow; minimum, 4.3 ft³/s (0.12 m³/s) Nov. 13, 1959, gage height, 0.13 ft (0.040 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 4	0800	*492	13.9	*3.33	1.015	May 26	2400	218	6.17	2.49	0.759
May 9	2100	359	10.2	2.99	.911	June 19	2100	212	6.00	2.48	.756

Minimum discharge, 15 ft³/s (0.42 m³/s) Nov. 29, gage height, 0.75 ft (0.229 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	25	178	61	60	34	53	148	146	132	51	33
2	20	26	215	60	59	30	52	213	137	126	52	33
3	21	29	217	65	59	28	52	217	131	124	51	32
4	23	31	333	68	52	28	58	204	123	124	48	31
5	21	28	206	64	47	29	70	197	119	126	47	31
6	22	27	152	60	44	30	100	202	120	129	61	31
7	22	27	130	57	43	33	98	228	127	132	59	31
8	22	25	125	56	43	35	168	273	148	142	51	31
9	26	25	123	53	45	38	173	318	162	131	48	30
10	27	24	111	51	48	43	164	324	174	120	46	30
11	26	23	98	51	50	44	174	278	172	116	45	30
12	24	26	84	48	50	44	165	263	160	110	43	29
13	22	25	74	47	47	44	149	286	151	104	43	29
14	22	32	70	52	45	44	138	289	146	98	44	31
15	22	72	72	68	43	43	127	268	153	93	72	33
16	22	45	67	97	49	46	115	263	165	90	52	30
17	24	34	62	99	46	54	108	258	179	89	47	29
18	23	22	57	99	45	64	101	231	187	85	46	28
19	22	22	54	93	42	61	97	215	200	80	43	28
20	22	32	52	87	41	59	100	195	193	76	42	27
21	25	29	48	82	40	56	94	191	179	73	40	27
22	24	33	45	79	39	56	91	195	169	70	40	27
23	23	32	45	74	39	54	88	200	156	67	38	28
24	22	36	46	70	38	55	86	191	153	64	38	27
25	26	33	47	66	38	51	82	183	146	62	40	27
26	26	35	79	65	37	50	80	189	138	59	38	26
27	24	33	72	72	36	49	84	215	137	56	37	26
28	23	27	64	67	36	48	85	204	140	55	36	26
29	25	17	70	65	35	47	89	185	146	55	36	25
30	28	29	77	62	---	50	110	172	143	54	35	25
31	25	---	73	61	---	57	---	158	---	51	34	---
TOTAL	724	904	3146	2099	1296	1404	3151	6953	4600	2893	1403	871
MEAN	23.4	30.1	101	67.7	44.7	45.3	105	224	153	93.3	45.3	29.0
MAX	28	72	333	99	60	64	174	324	200	142	72	33
MIN	20	17	45	47	35	28	52	148	119	51	34	25
CFSM	.34	.44	1.47	.98	.65	.66	1.52	3.25	2.22	1.35	.66	.42
IN.	.39	.49	1.70	1.13	.70	.76	1.70	3.75	2.48	1.56	.76	.47
AC-FT	1440	1790	6240	4160	2570	2780	6250	13790	9120	5740	2780	1730

CAL YR 1975 TOTAL 31012 MEAN 85.0 MAX 427 MIN 15 CFSM 1.23 IN 16.74 AC-FT 61510
WTR YR 1976 TOTAL 29444 MEAN 80.4 MAX 333 MIN 17 CFSM 1.17 IN 15.90 AC-FT 58400

12501000 SOUTH FORK AHTANUM CREEK AT CONRAD RANCH, NEAR TAMPICO, WA

LOCATION.--Lat 46°30'[illegible]", long 120°54'55", in SE¼ sec.23, T.12 N., R.15 E., Yakima County, Hydrologic Unit 17030003, on left bank at Conrad Ranch, 2.7 mi (4.3 km) southwest of Tampico, 20.3 mi (32.7 km) southwest of Yakima, and at mile 4.0 (6.4 km).

DRAINAGE AREA.--24.8 mi² (64.2 km²).

PERIOD OF RECORD.--March 1915 to current year (no winter records prior to water year 1931). Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 312: 1910. WSP 902: 1939. WSP 1264: Drainage area. WSP 1316: 1943(M). WSP 1446: 1918(M).

GAGE.--Water-stage recorder. Concrete control Sept. 6, 1916, to December 1933, and since Nov. 28, 1962. Altitude of gage is 2,400 ft (732 m), from topographic map. Prior to Aug. 9, 1918, nonrecording gage at datum 1.00 ft (0.305 m) lower and Aug. 9, 1918, to Mar. 22, 1951, nonrecording gage at present datum.

REMARKS.--Records good. Diversion for irrigation of about 55 acres (0.22 km²) above station. No regulation.

AVERAGE DISCHARGE.--46 years (water years 1931-76), 20.2 ft³/s (0.572 m³/s), 14,630 acre-ft/yr (18.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,230 ft³/s (34.8 m³/s) Jan. 15, 1974, gage height, 5.39 ft (1.643 m), from rating curve extended above 140 ft³/s (3.96 m³/s) on basis of slope-area measurement of peak flow; minimum, 2.4 ft³/s (0.068 m³/s) Dec. 16, 1964, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 4	0800	*131	3.71	2.88	0.878	May 13	2100	77	2.18	2.54	0.774
Feb. 7	1600	a	---	*3.23	0.985	June 19	1800	60	1.70	2.41	.735
Apr. 8	2000	60	1.70	2.41	.735						

Minimum discharge, 6.4 ft³/s (0.18 m³/s) Nov. 18, 19, gage height, 1.77 ft (0.539 m).

a Result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	9.3	65	17	18	12	19	35	44	41	17	11
2	8.7	9.9	67	16	18	11	18	46	42	39	17	11
3	8.7	11	61	16	18	10	19	50	39	39	17	11
4	9.3	11	105	17	15	10	19	49	37	38	16	11
5	8.7	11	72	17	14	11	23	48	36	36	16	11
6	8.7	11	51	17	12	11	35	48	35	35	18	11
7	8.7	11	42	17	12	12	37	51	36	35	18	11
8	8.7	11	37	17	13	12	53	57	40	37	17	11
9	9.9	11	35	16	13	14	57	63	43	35	15	11
10	11	11	32	15	14	17	54	72	47	34	14	9.9
11	11	11	30	15	14	17	56	68	49	34	14	9.9
12	9.3	11	28	14	14	17	55	66	49	32	14	9.9
13	9.3	11	27	14	14	17	50	68	47	30	14	9.9
14	8.7	14	24	16	13	17	44	71	46	29	14	11
15	8.7	20	24	18	12	17	40	67	47	27	22	11
16	8.7	14	22	22	14	18	36	67	50	26	17	11
17	8.7	11	20	27	14	21	34	65	52	25	15	11
18	8.7	8.0	19	30	13	23	31	60	55	25	14	11
19	8.7	9.0	18	30	12	23	30	57	59	23	14	11
20	8.7	10	17	29	12	22	30	53	59	22	14	11
21	9.9	9.9	17	27	12	22	29	52	57	22	14	9.9
22	9.6	9.9	16	26	12	22	28	52	55	22	13	11
23	8.7	9.3	15	25	12	21	27	53	52	21	13	11
24	8.7	11	16	25	12	22	25	53	51	20	13	9.9
25	9.9	9.9	14	22	12	20	25	52	48	19	14	9.9
26	9.9	12	19	21	13	19	24	52	45	19	13	9.9
27	9.3	11	18	22	13	18	25	55	43	18	13	9.9
28	9.3	9.9	17	20	13	17	25	54	42	18	12	9.3
29	9.9	13	17	20	13	17	26	53	42	18	12	9.3
30	11	28	19	19	---	17	30	50	43	18	12	9.3
31	9.9	---	19	19	---	19	---	47	---	17	12	---
TOTAL	288.3	350.1	983	626	391	526	1004	1734	1390	854	458	315.0
MEAN	9.30	11.7	31.7	20.2	13.5	17.0	33.5	55.9	46.3	27.5	14.8	10.5
MAX	11	28	105	30	18	23	57	72	59	41	22	11
MIN	8.7	8.0	14	14	12	10	18	35	35	17	12	9.3
AC-FT	572	694	1950	1240	776	1040	1990	3440	2760	1690	908	625

CAL YR 1975 TOTAL 9438.4 MEAN 25.9 MAX 105 MIN 6.3 AC-FT 18720
WTR YR 1976 TOTAL 8919.4 MEAN 24.4 MAX 105 MIN 8.0 AC-FT 17690

12502500 AHTANUM CREEK AT UNION GAP, WA

LOCATION.--Lat 46°32'08", long 120°28'20", in SE¼SW¼ sec.8, T.12 N., R.19 E., Yakima County, Hydrologic Unit 17030003, on left bank just upstream from union Pacific Railway bridge at Union Gap, 1.0 mi (1.6 km) south of town of Union Gap, and at mile 0.6 (110 km).

DRAINAGE AREA.--173 mi² (448 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to November 1904, August 1907 to July 1908, March to October 1910, April 1911 to September 1914, May 1951 to April 1953, August 1960 to current year. Published as "near Yakima" 1904, 1907-08, 1910-12. Records for water years 1913-14 are published in WSP 1286.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 940 ft (287 m), from topographic map. Prior to Sept. 30, 1914, nonrecording gage at approximately same site at various datums. May 12, 1951 to Sept. 30, 1972, water-stage recorder at present site at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good. No regulation. Diversions for irrigation of about 9,000 acres (36 km²) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) Jan. 16, 1974, gage height, 10.36 ft (3.158 m); no flow many days during September and October 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 596 ft³/s (16.9 m³/s) Dec. 4, gage height, 5.13 ft (1.564 m); minimum, 16 ft³/s (0.45 m³/s) Aug. 4, gage height, 2.44 ft (0.744 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	37	109	97	95	67	90	98	152	98	19	27
2	25	36	306	92	93	58	87	150	142	92	21	26
3	23	37	320	100	93	57	86	214	133	89	20	24
4	24	39	462	100	87	67	89	214	125	87	19	24
5	24	41	458	100	60	64	95	198	123	86	20	24
6	25	41	290	93	58	71	116	177	114	83	19	25
7	26	42	234	93	73	73	142	189	116	79	23	26
8	26	43	205	92	103	71	175	211	121	89	27	23
9	27	45	198	86	97	72	255	253	148	95	26	20
10	25	48	179	86	90	84	239	290	148	89	27	21
11	24	50	167	90	84	90	239	300	157	86	25	21
12	22	48	155	86	84	84	248	258	152	81	23	21
13	22	46	142	81	81	84	229	248	142	73	21	22
14	22	45	123	84	77	84	211	277	130	64	27	22
15	22	80	135	89	76	83	198	275	123	51	28	25
16	22	160	118	118	77	83	179	260	132	44	35	25
17	23	95	105	135	79	87	169	260	146	40	31	24
18	23	55	100	142	79	98	157	239	155	35	27	27
19	24	40	95	137	76	103	148	216	169	33	28	27
20	27	54	93	132	72	100	144	189	181	30	30	27
21	31	60	90	125	71	98	135	165	171	29	28	26
22	33	62	89	123	71	95	126	159	154	29	26	27
23	32	63	87	116	71	93	119	163	137	27	24	29
24	32	64	84	109	71	93	114	169	128	22	24	30
25	35	64	84	106	71	92	106	163	121	23	30	31
26	38	65	89	105	75	90	98	155	113	26	32	33
27	39	68	113	105	77	89	87	169	105	24	32	33
28	38	65	101	106	71	87	84	194	98	22	31	32
29	39	62	100	101	67	83	83	181	93	18	30	30
30	36	57	106	98	---	80	80	175	95	19	30	29
31	36	---	105	97	---	93	---	165	---	19	29	---
TOTAL	873	1712	5042	3224	2279	2573	4328	6374	4024	1682	812	781
MEAN	28.2	57.1	163	104	78.6	83.0	144	206	134	54.3	26.2	26.0
MAX	39	160	462	142	103	103	255	300	181	98	35	33
MIN	22	36	84	81	58	57	80	98	93	18	19	20
AC-FT	1730	3400	10000	6390	4520	5100	8580	12640	7980	3340	1610	1550

CAL YR 1975 TOTAL 38054 MEAN 104 MAX 462 MIN 11 AC-FT 75480
WTR YR 1976 TOTAL 33704 MEAN 92.1 MAX 462 MIN 18 AC-FT 66850

12503950 YAKIMA RIVER AT PARKER, WA

LOCATION.--Lat 46°30'22", long 120°27'07", in NE¼NW¼ sec.28, T.12 N., R.19 E., Yakima County, Hydrologic Unit 17030003, at road bridge 0.7 mi (1.1 km) east of Parker, 0.8 mi (1.3 km) upstream from Sunnyside diversion dam, and at mile 104.6 (168.3 km).

DRAINAGE AREA.--3,660 mi² (9,480 km²), approximately.

PERIOD OF RECORD.--Water years 1959-70, 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1959 to September 1970.
pH: August 1959 to September 1970.
WATER TEMPERATURE: August 1959 to September 1970.

REMARKS.--Records prior to October 1972 collected at this site and published as 12505000 "near Parker."

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT									
20...	1410	2080	180	6.8	10.6	17	6	11.8	4200
27...	1240	1670	200	7.5	8.0	17	6	12.2	3700
NOV									
10...	1240	2280	140	8.0	5.6	8	4	14.2	14000
17...	1205	3070	130	8.0	4.4	21	7	13.7	B2200
DEC									
08...	1255	9660	87	7.6	4.6	58	23	13.6	82000
15...	1340	10200	94	7.5	4.4	29	13	13.8	B100
JAN									
05...	1325	8270	73	6.5	1.8	21	8	14.3	600
19...	1240	7770	103	7.7	3.5	46	24	14.0	4600
FEB									
02...	1150	6850	91	7.2	2.5	17	7	14.1	B700
23...	1310	3030	120	7.5	5.3	13	6	13.2	280
MAR									
08...	1225	2290	120	7.8	4.8	8	5	13.6	B20
22...	1240	2760	140	8.2	6.2	4	9	12.5	880
APR									
12...	1215	9800	95	7.2	8.8	46	30	12.1	1500
26...	1240	4780	103	7.5	9.3	25	10	11.6	580
MAY									
10...	1220	9340	81	7.5	11.4	50	35	11.3	>1800
24...	1240	6920	89	7.0	11.2	13	8	11.7	11000
JUN									
07...	1245	1830	115	8.2	15.9	17	8	11.2	2300
21...	1230	5110	82	7.0	15.0	8	15	11.0	8000
JUL									
12...	1200	4400	87	7.7	16.8	17	7	10.9	2000
26...	1250	2100	111	7.8	19.3	13	9	9.6	B1300
AUG									
09...	1315	2710	111	7.9	17.7	21	4	9.0	1100
23...	1130	1640	119	7.9	17.4	13	4	9.9	--
SEP									
13...	1200	1500	115	8.3	14.2	17	2	10.9	720
20...	1150	1470	120	7.6	16.5	17	2	10.2	8600

B Results based upon colony counts outside the ideal range.

12503950 YAKIMA RIVER AT PARKER, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	FECAL COLI-FORM (COL. PER 100 ML)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)
OCT								
20...	120	.25	.02	.23	.58	.81	.12	.05
27...	54	.32	.01	.18	.43	.61	.10	.06
NOV								
10...	B14	.16	.01	.11	.16	.27	.09	.02
17...	B12	.20	.01	.12	.30	.42	.09	.01
DEC								
08...	B100	.13	.01	.09	.26	.35	.10	.02
15...	B12	.07	.01	.23	.36	.59	.06	.01
JAN								
05...	54	.09	.01	.08	.07	.15	.05	.02
19...	B40	.13	.01	.24	.33	.57	.11	.03
FEB								
02...	66	.12	.00	.11	.16	.27	.05	.01
23...	B1	.16	.01	.11	.22	.33	.08	.03
MAR								
08...	<2	.12	.01	.11	.13	.24	.06	.02
22...	B4	.06	.01	.11	.21	.32	.07	.04
APR								
12...	B60	.04	.01	.10	.26	.36	.14	.01
26...	5	.04	.00	.06	.13	.19	.06	.02
MAY								
10...	200	.06	.01	.12	.28	.40	.16	.01
24...	76	.07	.00	.06	.12	.18	.07	.01
JUN								
07...	60	.07	.01	.05	.26	.31	.08	.01
21...	B90	.06	.01	.07	.31	.38	.09	.02
JUL								
12...	B130	.10	.01	.06	.18	.24	.06	.01
26...	B32	.12	.01	.18	.62	.80	.09	.03
AUG								
09...	42	.15	.01	.16	.36	.52	.08	.02
23...	B10	.07	.01	.05	.16	.21	.08	.03
SEP								
13...	60	.09	.01	.08	.18	.26	.07	.04
20...	40	.08	.01	.08	.15	.23	.08	.04

B Results based upon colony counts outside the ideal range.

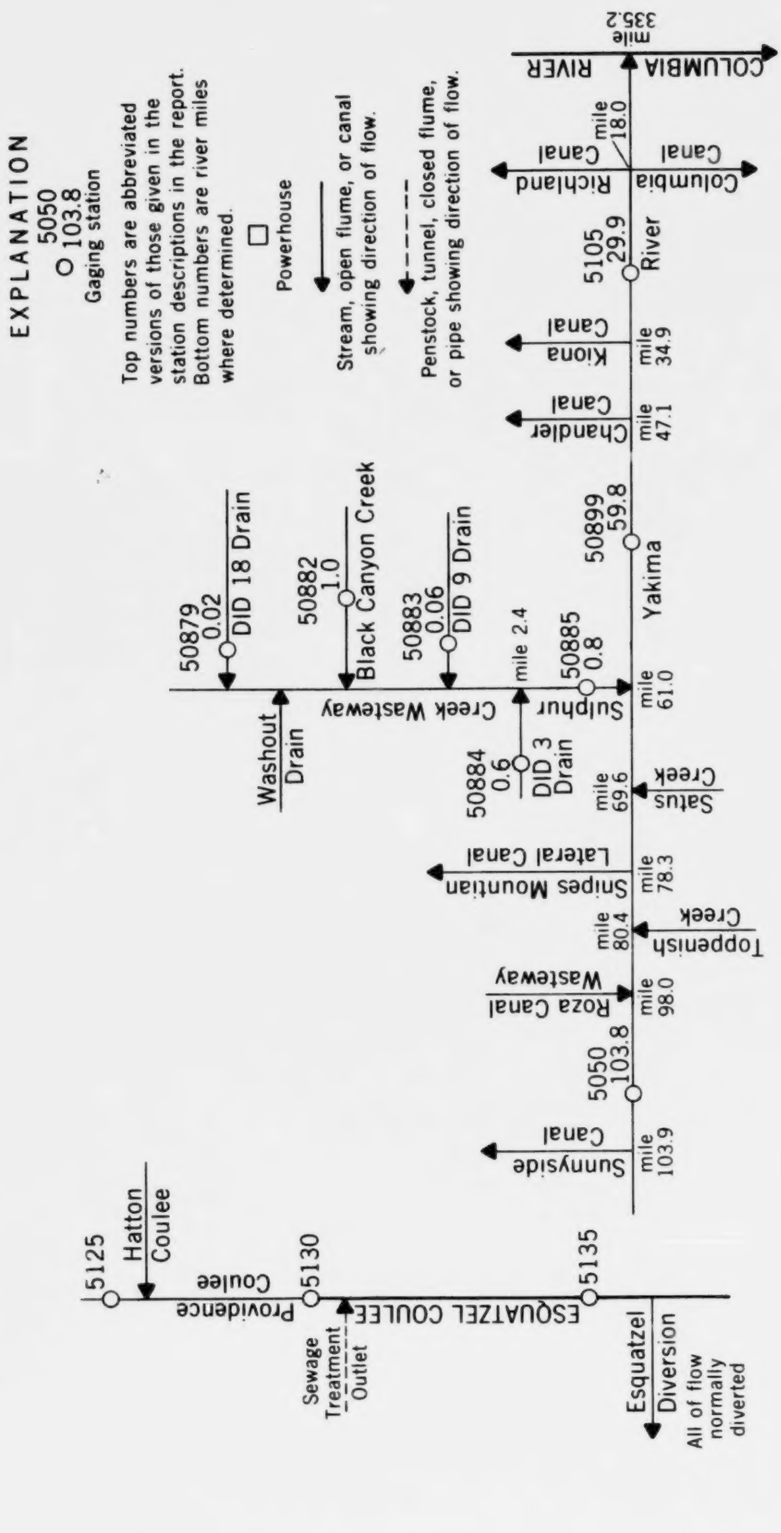
EXPLANATION
5050
103.8
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
5125
Hatton Coulee
Providence Coulee
5130
Sewage Treatment Outlet
ESQUATZEL COULEE
5135
Esquatzel Diversion
All of flow normally diverted
Sunnyside Canal
mile 103.9
5050
103.8
Roza Canal Wasteway
mile 98.0
Toppenish Creek
mile 80.4
Snipes Mountian Lateral Canal
mile 78.3
Satus Creek
mile 69.6
50884
0.6
DID 3 Drain
Washout Drain
Sulphur Creek Wasteway
mile 2.4
50879
0.02
DID 18 Drain
50882
1.0
Black Canyon Creek
50883
0.06
DID 9 Drain
50885
0.8
mile 61.0
Yakima River
50899
59.8
Chandler Canal
mile 47.1
Kiona Canal
mile 34.9
5105
29.9
Richland Canal
Columbia Canal
mile 18.0
COLUMBIA RIVER
mile 335.2

Figure 15. Gaging stations in Yakima River basin downstream from Sunnyside Canal and in Esquatzel Coulee.

12505000 YAKIMA RIVER NEAR PARKER, WA

LOCATION.--Lat 46°29'50", long 120°26'30", in NE¼SE¼ sec.28, T.12 N., R.19 E., Yakima County, Hydrologic Unit 17030003, on left bank 500 ft (152 m) downstream from Sunnyside diversion dam, 1.3 mi (2.1 km) east of Parker, 3.1 mi (5.0 km) downstream from Ahtanum Creek, and at mile 103.8 (167.0 km).

DRAINAGE AREA.--3,660 mi^2 (9,479 km^2).

PERIOD OF RECORD.--April 1908 to current year. Monthly discharge only for some periods pulished in WSP 1316. Prior to October 1916, published as "near Wapato."

REVISED RECORDS.--WSP 982: 1942. WSP 1122: 1934. WSP 1216: 1949-50. WSP 1516: 1955. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 885.89 ft (270.019 m) above mean sea level (Bureau of Reclamation bench mark). See WSP 2133 for history of changes prior to May 3, 1962. May 3, 1962 to Sept. 30, 1971, water-stage recorder at site 500 ft (152 m) downstream at present datum.

REMARKS.--Records excellent. Diversions above station for irrigation of about 200,000 acres (810 km^2) above and 220,000 acres (890 km^2) below station. During the irrigation season when Sunnyside Canal is carrying water, as much as 30 ft^3/s (0.85 m^3/s) depending on the stage of the canal, is released ahead of the fish screens and passes river and canal gaging stations unmeasured; Oct. 1, 1965, to Sept. 30, 1971, records include this flow. Some regulation by diversions and by Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes.

COOPERATION.--Gage-height record, 5 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 2 discharge measurements made and records reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,000 ft^3/s (1,840 m^3/s) Dec. 23, 1933, gage height, 15.0 ft (4.57 m), from floodmark; minimum, 3.4 ft^3/s (0.096 m^3/s) May 22, 1973, gage height, 1.83 ft (0.558 m); discharge known to be less than 10 ft^3/s(0.28 m^3/s) for several days during latter part of irrigation season in most years prior to 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,700 ft^3/s (756 m^3/s) Dec. 4, gage height, 13.14 ft (4.005); minimum, 200 ft^3/s (5.66 m^3/s) July 29, Sept. 30, gage height, 2.09 ft (0.637 m).

MONTHLY DISCHARGE OF YAKIMA RIVER AND CANALS NEAR PARKER, WASH.
WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Month	Runoff in acre-feet						Combined flow of Yakima River and canals (acre-feet)
	Yakima River near Parker	Roza Canal at mile 26.9	Union Gap Canal (estimated)	New Reservation Canal	Old Reservation Canal	Sunnyside Canal	
October	63,770	22,420	106	20,720	428	29,550	137,000
November	149,600	0	0	0	895	0	150,500
December	685,400	0	0	0	1,270	0	686,700
CAL YR 1975	2,720,000	333,900	10,580	616,200	6,950	435,300	4,124,000
January	461,800	0	0	0	1,550	0	463,400
February	236,800	0	0	0	574	0	237,400
March	147,900	12,800	0	16,370	385	7,750	185,200
April	313,000	35,230	1,220	66,880	0	44,790	461,100
May	372,100	61,560	2,110	119,800	0	73,270	628,800
June	120,700	63,680	2,130	116,600	0	71,530	374,600
July	96,780	69,220	2,020	118,700	0	77,240	364,000
August	47,610	62,780	1,720	105,000	0	75,650	292,800
September	25,820	46,850	1,550	97,540	0	63,090	234,800
WTR YR 1976	2,721,000	374,500	10,860	661,600	5,100	442,900	4,216,000

NOTE.--New reservation, Old Reservation, and Sunnyside Canals divert from river above station and below Union Gap. Roza and Union Gap Canals divert above Union Gap but records given herein show flow in these canals that reaches the valley below Union Gap. Records for Sunnyside Canal furnished by U.S.B.R. Records for Union Gap Canal estimated on basis of discharge measurements and records of flow at canal headworks. Combined flow represents flow of Yakima River that reaches valley below Union Gap.

12505000 YAKIMA RIVER NEAR PARKER, WA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	648	1760	3330	9180	6890	2460	3530	4050	3900	2790	488	399
2	436	1760	15700	8960	6690	2390	3450	5940	3070	2420	972	300
3	328	1950	22800	8860	6530	2260	3400	7770	1870	2010	922	257
4	328	2380	25500	8680	6380	2200	3480	6870	1240	2060	556	419
5	322	2580	21500	8570	5970	2100	3860	6010	628	2180	798	442
6	377	2560	14300	8340	5440	2150	4880	5350	423	2270	755	608
7	430	2530	11600	8220	4810	2190	5690	5260	391	2560	1160	659
8	353	2370	10200	7990	4660	2060	6090	6140	702	3290	1860	556
9	233	2260	11900	6760	4550	2070	8230	8040	1280	4560	1360	520
10	350	2180	12600	6200	4290	2570	8210	9190	1660	3960	890	534
11	436	2090	12000	6140	3950	2940	8700	9150	1590	3420	489	534
12	333	2010	11400	5980	4050	2760	9110	7500	1340	3120	341	488
13	290	1950	11000	5580	4330	2690	8300	7330	1090	2820	536	501
14	281	1960	10600	5520	3920	2670	7620	7180	749	1650	702	434
15	823	2140	10500	5880	3690	2220	6970	6780	488	988	929	717
16	1020	2550	10300	9240	3630	1940	6300	6220	690	712	1610	575
17	1600	2890	9660	11200	3740	2120	5820	6290	1690	712	1380	488
18	1810	2690	9550	9490	3630	2630	5530	5670	2460	814	1190	467
19	1780	2440	9280	7940	3370	2840	4780	5220	2700	639	687	488
20	1990	2350	9660	7370	3410	2760	4590	4660	3600	414	673	430
21	2050	2390	9360	7160	3100	2700	5120	4860	3620	379	631	416
22	1760	2310	8880	6910	2980	2480	4680	5030	3100	372	436	317
23	1630	2280	7500	6640	2910	2240	4500	5720	2730	645	310	316
24	1530	2320	7390	6800	2880	2010	4310	5940	3090	712	269	306
25	1530	3040	7420	6640	2780	2130	4250	5630	3240	688	491	316
26	1610	3630	7430	6440	2760	2100	4050	5000	3040	589	666	366
27	1560	4080	8680	6640	2740	2450	3560	5180	2690	366	659	344
28	1490	3760	8470	7680	2690	2420	2760	5480	2560	257	430	322
29	1500	3260	8320	7510	2590	2310	2790	5080	2480	275	728	276
30	1630	2940	9150	7250	---	2350	3220	4740	2740	568	643	223
31	1690	---	9550	7070	---	3360	---	4310	---	554	494	---
TOTAL	32148	75410	345530	232840	119360	74570	157780	187590	60851	48794	24005	13018
MEAN	1037	2514	11150	7511	4116	2405	5259	6051	2028	1574	774	434
MAX	2050	4080	25500	11200	6890	3360	9110	9190	3900	4560	1860	717
MIN	233	1760	3330	5520	2590	1940	2760	4050	391	257	269	223
AC-FT	63770	149600	685400	461800	236800	147900	313000	372100	120700	96780	47610	25820

CAL YR 1975 TOTAL 1371562 MEAN 3758 MAX 25500 MIN 110 AC-FT 2720000
WTR YR 1976 TOTAL 1371896 MEAN 3748 MAX 25500 MIN 223 AC-FT 2721000

12508790 DID 18 DRAIN AT SUNNYSIDE, WA

LOCATION.--Lat 46°19'29", long 119°58'38", in SW¼NW¼, sec.29, T.10 N., R.23 E., Yakima County, Hydrologic Unit 17030003, on left bank 40 ft (12 m) upstream from State Highway 241 culvert crossing, 100 ft (30 m) upstream from mouth (on Sulphur Creek wasteway), and 1.0 mi (1.6 km) east of Sunnyside.

DRAINAGE AREA.--14.7 mi^2 (38.1 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1976.

GAGE.--Water-stage recorder. Datum of gage 740 ft (226 m) from topographic map.

REMARKS.--Records good. Regulation from agricultural return flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 26 ft^3/s (0.74 m^3/s) Aug. 1, gage height, 3.46 ft (1.055 m); minimum daily, 4.6 ft^3/s (0.13 m^3/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						4.6	9.6	12	17	18	23	20
2						4.7	9.3	13	16	17	22	19
3						4.7	9.9	14	15	17	21	19
4						4.7	9.5	15	15	18	21	20
5						4.7	10	14	15	17	21	20
6						4.7	11	15	15	17	22	20
7						4.7	13	15	15	18	22	20
8						4.7	13	14	14	19	22	21
9						4.9	14	15	15	19	22	21
10						5.0	13	16	15	20	21	22
11						5.0	12	17	17	21	21	22
12						5.0	13	17	17	20	20	21
13						5.0	12	17	16	21	20	21
14						5.0	13	16	16	22	22	23
15						5.0	12	14	17	21	22	21
16						5.1	11	14	18	20	23	21
17						5.1	11	14	17	19	23	20
18						5.1	11	16	17	20	21	19
19						5.1	12	17	19	19	21	19
20						5.3	12	16	19	19	20	19
21						5.6	12	15	18	19	22	18
22						6.0	11	15	18	18	23	18
23						6.7	12	16	18	20	21	17
24						7.2	12	16	18	19	20	17
25						7.2	13	16	19	20	23	18
26						7.2	13	16	20	21	22	19
27						7.2	12	16	20	21	22	18
28						7.3	12	16	19	20	22	18
29						7.4	13	17	18	21	21	17
30						8.0	13	18	19	21	21	16
31						10	---	18	---	21	20	---
TOTAL						177.9	354.3	480	512	603	667	584
MEAN						5.74	11.8	15.5	17.1	19.5	21.5	19.5
MAX						10	14	18	20	22	23	23
MIN						4.6	9.3	12	14	17	20	16
AC-FT						353	703	952	1020	1200	1320	1160

12508820 BLACK CANYON CREEK AT WANETA ROAD NEAR SUNNYSIDE, WA

LOCATION.--Lat 46°17'24", long 119°58'37", in SW¼SW¼ sec.5, T.9 N., R.23 E., Yakima County, Hydrologic Unit 17030003, on left bank 20 ft (6.1 m) upstream from Waneta Road county bridge, 1.0 mi (1.6 km) upstream from mouth (on Sulphur Creek wasteway), and 2.2 mi (3.5 km) southeast of Sunnyside.

DRAINAGE AREA.--35.8 mi² (92.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1976.

GAGE.--Water-stage recorder. Datum of gage 700 ft (213 m) from topographic map.

REMARKS.--Records good except those for Mar 1-30, which are poor. Regulation from agricultural return of flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 37 ft³/s (1.05 m³/s) July 6; maximum gage height, 1.86 ft (0.567 m) July 12; minimum daily, 5.0 ft³/s (0.14 m³/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						5.0	7.9	14	26	24	29	22
2						5.2	8.1	15	23	26	28	22
3						5.2	10	15	23	28	26	22
4						5.2	9.6	16	23	30	24	23
5						5.2	10	17	23	30	25	23
6						5.2	11	18	22	33	28	23
7						5.2	12	18	22	30	30	23
8						5.2	12	18	21	30	30	23
9						5.2	12	18	21	30	30	23
10						5.2	12	19	21	29	27	24
11						5.2	13	20	22	30	26	24
12						5.2	13	20	24	29	27	23
13						5.2	13	18	24	30	29	23
14						5.2	15	20	24	28	31	24
15						5.4	16	21	25	27	32	23
16						5.6	16	22	26	27	31	23
17						5.7	15	21	24	26	30	24
18						5.8	15	21	22	24	29	24
19						5.9	16	22	24	25	31	23
20						6.0	16	23	25	24	32	23
21						6.1	15	23	24	24	30	24
22						6.3	15	24	23	25	30	24
23						6.7	15	26	24	24	30	23
24						7.0	15	27	24	27	28	24
25						7.4	15	25	25	26	30	26
26						7.9	15	24	26	26	28	26
27						7.9	12	24	24	26	27	26
28						7.8	12	23	24	27	26	25
29						7.7	12	24	24	27	25	25
30						7.6	12	25	24	25	24	24
31						7.9	---	24	---	24	24	---
TOTAL						187.3	390.6	645	707	841	877	709
MEAN						6.04	13.0	20.8	23.6	27.1	28.3	23.6
MAX						7.9	16	27	26	33	32	26
MIN						5.0	7.9	14	21	24	24	22
AC-FT						372	775	1280	1400	1670	1740	1410

12508830 DID 9 DRAIN NEAR SUNNYSIDE, WA

LOCATION.--Lat 46°17'00", long 119°59'53", in SW¼NW¼ sec.7, T.9 N., R.23 E., Hydrologic Unit 17030003, on right bank on upstream side of culvert on county road, 300 ft (91 m) upstream from mouth (on Sulphur Creek wasteway), and 2.2 mi (3.5 km) south of Sunnyside.

DRAINAGE AREA.--27.1 mi² (70.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1976.

GAGE.--Water-stage recorder. Datum 690 ft (210 m) from topographic map.

REMARKS.--Records excellent. Flow regulated by agricultural return flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 62 ft³/s (1.76 m³/s) July 12, gage height, 4.66 ft (1.420 m); minimum daily, 12 ft³/s (0.34 m³/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						12	17	38	55	49	50	48
2						13	18	38	53	49	54	45
3						13	19	36	50	49	52	46
4						13	19	32	46	52	51	48
5						13	20	34	43	54	47	49
6						13	22	34	42	50	52	50
7						13	24	35	46	47	52	51
8						13	26	33	46	51	56	53
9						13	28	33	45	51	55	54
10						13	28	35	45	53	53	55
11						13	29	36	48	58	50	54
12						13	30	35	51	59	50	54
13						13	30	35	53	56	50	54
14						14	33	35	51	53	51	55
15						14	33	38	50	52	53	55
16						15	33	39	51	53	54	52
17						16	34	39	48	52	51	52
18						17	34	36	45	50	51	51
19						17	35	37	43	47	51	49
20						17	37	39	45	46	53	48
21						17	35	39	47	45	50	48
22						17	34	39	47	44	50	49
23						17	36	39	47	43	49	49
24						18	37	40	47	43	47	49
25						18	37	39	48	43	52	51
26						18	40	39	48	42	53	52
27						18	39	41	47	42	50	51
28						17	38	45	46	42	49	51
29						16	38	48	44	43	50	51
30						16	38	54	46	45	50	50
31						17	---	56	---	45	48	---
TOTAL						467	921	1196	1423	1508	1584	1524
MEAN						15.1	30.7	38.6	47.4	48.6	51.1	50.8
MAX						18	40	56	55	59	56	55
MIN						12	17	32	42	42	47	45
AC-FT						926	1830	2370	2820	2990	3140	3020

12508840 DID 3 DRAIN NEAR SUNNYSIDE, WA

LOCATION.--Lat 46°16'58", long 120°00'30", in SW¼NE¼ sec.12, T.9 N., R.22 E.,Yakima County, Hydrologic Unit 17030003, on left bank 100 ft (30 m) upstream from culvert under Union Pacific railroad crossing, 0.6 mi (1.0 km) upstream from mouth (on Sulphur Creek wasteway), and 22 mi (3.5 km) south of Sunnyside.

DRAINAGE AREA.--18.8 mi² (48.7 km²).

WATER-DISCHARGE RECORD

PERIOD OF RECORD.--March to September 1976.

GAGE.--Water-stage recorder. Datum of gage 700 ft (213 m) from topographic map.

REMARKS.--Records good. Regulation from agricultural return flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 53 ft³/s (1.50 m³/s) Aug. 25, gage height, 6.51 ft (1.984 m); minimum daily, 9.8 ft³/s (0.28 m³/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						9.8	16	27	40	36	37	36
2						10	16	27	38	38	38	35
3						10	16	27	35	37	36	35
4						10	15	28	33	42	35	36
5						10	16	27	31	40	36	38
6						10	16	28	31	39	37	37
7						10	17	29	35	37	40	37
8						10	18	29	35	37	44	39
9						10	19	29	35	36	42	39
10						10	18	30	35	36	40	38
11						10	20	30	34	39	39	39
12						10	21	30	35	39	38	39
13						10	22	29	35	36	39	41
14						10	22	28	35	36	40	39
15						10	22	28	35	41	42	40
16						11	23	27	35	37	41	39
17						11	24	27	33	36	40	39
18						12	23	27	33	35	41	39
19						12	26	28	34	36	41	39
20						12	27	29	33	36	37	39
21						13	25	28	35	35	37	39
22						13	25	28	35	35	36	39
23						13	26	28	36	35	37	39
24						14	27	29	36	36	35	39
25						14	26	29	36	35	43	39
26						14	27	28	36	35	38	39
27						14	26	30	36	32	36	39
28						14	27	31	36	32	37	38
29						15	27	31	35	31	37	38
30						15	27	37	34	32	39	37
31						21	---	40	---	33	37	---
TOTAL						367.8	660	903	1045	1120	1195	1149
MEAN						11.9	22.0	29.1	34.8	36.1	38.5	38.3
MAX						21	27	40	40	42	44	41
MIN						9.8	15	27	31	31	35	35
AC-FT						730	1310	1790	2070	2220	2370	2280

12508850 SULPHUR CREEK WASTEWAY NEAR SUNNYSIDE, WA

LOCATION.--Lat 46°15'03", long 120°01'07", in SW¼NW¼ sec.24, T.9 N., R.22 E., Yakima County, Hydrologic Unit 17030003, on left bank 1.6 mi (2.6 km) downstream from DID 3 Drain, 0.8 mi (1.3 km) upstream from mouth (on Yakima River), and 4.5 mi (7.2 km) south of Sunnyside.

DRAINAGE AREA.--155 mi^2 (401 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1976.

GAGE.--Water-stage recorder. Datum of gage 650 ft (198 m) from topographic map.

REMARKS.--Records good except those for Mar. 1-30, which are poor. Considerable regulation from inflow from Roza and Sunnyside Canal wasteways, and agricultural return flow. At extreme high stages in the Yakima River, backwater will occur.

EXTREMES FOR CURRENT YEAR.--Maximum observed discharge during period March to September, 675 ft^3/s (19.1 m^3/s) Mar. 26, gage height, 3.48 ft (1.061 m); minimum daily discharge, 59 ft^3/s (1.67 m^3/s) Mar. 1, 15, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						59	439	213	392	254	295	313
2						60	450	215	370	245	316	303
3						60	449	191	313	250	309	299
4						60	456	167	276	305	332	314
5						62	417	175	258	311	299	325
6						64	343	178	263	291	313	330
7						66	342	185	310	277	342	334
8						67	327	232	277	300	385	348
9						67	316	247	260	311	382	383
10						66	328	233	299	338	368	357
11						65	317	256	307	359	356	354
12						64	328	307	320	376	333	373
13						62	342	301	327	363	327	365
14						61	290	273	321	338	339	353
15						59	264	259	292	321	361	353
16						59	232	260	285	292	384	376
17						66	213	276	266	268	388	406
18						205	197	275	252	263	368	428
19						235	197	254	249	257	365	418
20						250	220	254	268	263	341	416
21						200	216	249	271	252	325	373
22						153	202	251	257	231	328	371
23						140	229	265	258	219	316	354
24						130	270	242	255	227	282	316
25						350	256	296	261	225	344	321
26						600	262	295	271	224	373	326
27						520	249	305	266	237	355	318
28						440	225	343	260	246	366	291
29						379	217	343	250	247	365	288
30						300	210	366	253	252	360	278
31						355	---	389	---	262	326	---
TOTAL						5326	8803	8145	8531	8604	10643	10384
MEAN						172	293	263	284	278	343	346
MAX						600	456	389	392	376	388	428
MIN						59	197	167	249	219	282	278
AC-FT						10560	17460	16160	16920	17070	21110	20600

12508850 SULPHUR CREEK WASTEWAY NEAR SUNNYSIDE, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
MAR											
02...	1410	60	640	8.4	4	--	--	--	--	24	3.9
09...	1310	67	840	11.5	4	--	--	--	--	32	5.8
16...	1435	59	710	12.2	3	--	--	--	--	25	4.0
18...	1200	205	272	9.1	23	1.7	.76	2.5	.24	341	189
22...	1630	153	380	8.0	13	--	--	--	--	107	44
26...	1630	639	182	8.6	35	--	--	--	--	532	918
29...	1710	379	248	9.4	23	--	--	--	--	142	145
APR											
02...	1535	449	230	10.0	18	--	--	--	--	203	246
05...	1100	429	195	9.6	12	.92	.44	1.4	.18	131	152
09...	1540	284	249	10.5	17	--	--	--	--	227	174
12...	1415	320	260	11.5	17	--	--	--	--	145	125
15...	1435	251	258	10.3	7	--	--	--	--	223	151
19...	1100	223	335	10.7	12	1.7	.84	2.5	.43	277	167
22...	1630	177	394	13.8	11	--	--	--	--	257	123
27...	0950	265	279	9.8	10	--	--	--	--	275	197
30...	1210	218	323	16.1	13	--	--	--	--	326	192
MAY											
03...	1430	164	435	16.9	11	2.5	.83	3.3	.60	286	127
07...	0735	191	366	11.4	28	--	--	--	--	502	259
10...	1500	223	317	15.0	19	--	--	--	--	743	447
13...	1430	338	268	17.4	18	--	--	--	--	556	507
17...	1345	296	250	15.4	13	--	--	--	--	553	442
21...	1115	285	306	12.6	23	1.8	.86	2.7	.60	591	455
24...	1330	314	250	14.3	12	--	--	--	--	585	496
27...	1025	317	285	14.0	16	--	--	--	--	610	522
JUN											
01...	1435	418	205	13.4	12	1.4	.87	2.3	.50	520	587
03...	1245	330	315	14.1	13	--	--	--	--	530	472
08...	0945	299	305	16.0	14	1.9	1.7	3.6	.63	665	537
08...	1135	285	305	16.8	14	--	--	--	--	612	471
08...	1240	270	305	17.2	--	2.4	1.6	4.0	.67	564	411
08...	1400	258	335	18.4	14	--	--	--	--	676	471
08...	1530	260	335	18.6	13	2.6	1.7	4.3	.68	621	436
08...	1700	247	330	19.0	14	--	--	--	--	599	399
08...	1830	255	325	19.0	16	2.5	2.0	4.5	.65	603	415
08...	2005	236	335	18.4	17	2.6	2.0	4.6	.80	552	352
08...	2130	246	335	17.7	17	--	--	--	--	562	373
08...	2305	241	330	17.0	19	2.6	2.5	5.1	.84	763	496
09...	0030	255	335	16.1	18	--	--	--	--	645	444
09...	0200	265	325	15.6	20	2.2	2.0	4.2	.79	682	488
09...	0330	270	305	15.0	20	--	--	--	--	673	491
09...	0500	280	315	14.4	23	2.2	2.4	4.6	.68	684	517
09...	0645	320	305	13.9	23	--	--	--	--	781	675
09...	0810	334	275	14.4	22	2.1	2.2	4.3	.59	887	800
09...	0940	344	280	14.9	21	--	--	--	--	764	710
09...	1115	320	285	16.0	24	2.2	2.0	4.2	.66	714	617
09...	1240	290	305	17.0	14	--	--	--	--	680	532
09...	1405	275	325	18.5	13	2.4	2.1	4.5	.77	663	492
09...	1545	260	325	20.4	14	--	--	--	--	698	490
09...	1700	260	325	21.0	19	2.5	2.0	4.5	.66	703	494
09...	1830	251	355	20.8	16	--	--	--	--	629	426
09...	2010	243	330	19.9	15	2.6	1.7	4.3	.70	635	417
09...	2130	241	325	18.6	15	--	--	--	--	596	388
09...	2305	256	325	17.8	18	2.4	1.5	3.9	.74	590	408
10...	0045	256	325	16.1	17	--	--	--	--	591	408
10...	0200	251	325	16.6	17	2.6	2.1	4.7	.68	580	393
10...	0330	255	325	16.2	17	--	--	--	--	633	436
10...	0455	270	320	15.4	18	2.7	1.8	4.5	.66	623	454
10...	0625	270	310	15.4	18	--	--	--	--	637	464
10...	0750	280	310	15.2	19	2.6	1.0	3.6	.64	627	474
10...	0945	341	265	15.4	18	2.1	.91	3.0	.64	837	771
14...	1345	355	275	16.7	10	--	--	--	--	575	551
17...	1315	290	264	17.9	10	--	--	--	--	602	471
21...	1620	260	345	19.2	10	2.2	1.4	3.6	.59	577	405
24...	1345	278	320	17.9	19	--	--	--	--	602	452
28...	1345	280	285	19.3	10	--	--	--	--	584	442
JUL											
01...	1430	251	335	17.4	10	--	--	--	--	502	340
06...	1300	302	307	20.2	15	2.1	1.5	3.6	.50	691	563
08...	1345	320	285	21.0	15	--	--	--	--	704	608
12...	1415	394	260	19.2	12	--	--	--	--	572	608
16...	1040	320	290	18.0	27	--	--	--	--	534	461
19...	1600	260	325	22.0	27	2.1	1.6	3.7	.60	506	355
22...	1515	218	335	20.2	36	--	--	--	--	491	289
26...	1700	218	375	23.7	23	--	--	--	--	429	253
29...	1450	255	330	19.4	30	--	--	--	--	594	409
AUG											
03...	0900	317	325	17.0	29	1.9	1.2	3.1	.32	499	427
06...	0900	338	310	17.2	31	--	--	--	--	426	389
10...	0900	383	300	16.3	25	--	--	--	--	400	414
10...	1000	390	300	16.4	21	1.7	1.0	2.7	.24	407	429
10...	1100	386	300	17.0	19	--	--	--	--	438	456

12508850 SULPHUR CREEK WASTEWAY NEAR SUNNYSIDE, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
AUG											
10...	1200	372	300	17.5	22	1.8	1.1	2.9	.33	329	330
10...	1300	372	310	18.3	18	--	--	--	--	354	356
10...	1400	369	310	19.2	20	1.9	1.1	3.0	.30	365	364
10...	1530	355	315	20.6	21	--	--	--	--	443	425
10...	1600	355	315	20.7	19	1.9	1.1	3.0	.67	371	356
10...	1700	352	315	20.7	19	--	--	--	--	401	381
10...	1800	341	315	20.9	19	1.9	1.1	3.0	.35	376	346
10...	1900	348	315	20.6	22	--	--	--	--	366	344
10...	2000	341	310	20.4	28	1.9	1.1	3.0	.37	371	342
10...	2100	338	315	19.5	27	--	--	--	--	307	280
10...	2200	338	320	19.3	26	2.0	1.1	3.1	.37	360	329
10...	2300	341	315	18.9	19	--	--	--	--	352	324
11...	0001	348	318	18.4	27	--	--	--	--	367	345
11...	0100	344	318	18.0	26	1.8	1.2	3.0	.34	379	352
11...	0200	341	315	18.0	22	1.8	1.2	3.0	.33	369	340
11...	0330	344	315	17.3	27	--	--	--	--	367	341
11...	0400	352	315	17.2	30	1.8	1.0	2.8	.36	395	375
11...	0455	352	305	17.0	26	--	--	--	--	386	367
11...	0610	355	305	16.7	23	1.7	1.1	2.8	.32	373	358
11...	0700	355	305	17.0	25	--	--	--	--	382	366
11...	0800	358	305	16.6	24	1.7	1.3	3.0	.30	370	358
11...	0945	358	305	17.4	23	--	--	--	--	427	413
11...	1035	369	308	17.6	20	1.7	1.3	3.0	.39	331	330
11...	1135	376	303	18.5	18	--	--	--	--	393	399
11...	1235	383	300	19.4	24	1.6	1.2	2.8	.44	437	452
11...	1330	380	295	20.0	22	--	--	--	--	415	426
11...	1425	372	300	19.8	21	1.7	1.0	2.7	.36	385	387
11...	1530	366	307	21.2	21	--	--	--	--	393	388
11...	1605	366	312	20.9	38	1.8	1.3	3.1	.44	503	497
11...	1700	358	303	21.4	36	--	--	--	--	538	520
11...	1800	355	300	22.0	34	1.7	1.5	3.2	.44	486	466
11...	1900	348	307	21.8	29	--	--	--	--	440	413
11...	2000	344	310	21.0	28	1.7	1.3	3.0	.39	456	424
11...	2125	344	307	20.5	25	--	--	--	--	406	377
11...	2210	344	307	19.9	28	1.8	1.3	3.1	.40	409	380
11...	2300	341	305	19.7	28	--	--	--	--	391	360
12...	0005	352	307	19.0	28	1.7	1.1	2.8	.36	303	288
12...	0105	352	305	19.0	26	--	--	--	--	313	297
12...	0200	344	300	18.7	28	1.7	1.3	3.0	.39	440	409
12...	0315	352	305	18.4	25	--	--	--	--	415	394
12...	0435	352	302	17.8	27	1.7	1.1	2.8	.43	406	386
12...	0510	352	305	17.6	27	--	--	--	--	449	427
12...	0600	352	303	17.4	29	1.6	1.2	2.8	.39	460	437
12...	0700	352	307	17.4	24	--	--	--	--	427	406
12...	0800	355	305	17.4	27	1.7	1.4	3.1	.36	511	490
16...	1530	397	237	17.6	23	--	--	--	--	507	543
20...	0915	352	295	16.1	16	--	--	--	--	328	312
24...	0945	305	335	17.1	23	--	--	--	--	361	297
27...	1100	352	310	15.7	15	1.5	.68	2.2	.27	277	263
31...	1045	344	285	17.3	13	--	--	--	--	262	243
SEP											
02...	1600	305	275	20.4	13	--	--	--	--	269	222
07...	1515	341	285	17.1	15	1.8	.84	2.6	.30	237	218
09...	1315	433	310	15.6	14	--	--	--	--	307	359
15...	1415	362	265	17.4	10	--	--	--	--	202	197
17...	1200	414	290	16.0	6	--	--	--	--	193	216
20...	1700	425	275	--	8	--	--	--	--	203	233
23...	1345	362	305	17.5	6	1.8	.56	2.4	.26	140	137
27...	1500	330	330	17.5	7	--	--	--	--	173	154

12508850 SULPHUR CREEK WASTEWAY NEAR SUNNYSIDE, WA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL PCB (UG/L)	PCB IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)
AUG 27...	1100	.0	23	.00	.0	.0	19	.00	34	.01	87	.02

DATE	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- ELDRIN (UG/L)	DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)
AUG 27...	90	.01	.0	.02	14	.00	.6	.00	.0	.00	.0

DATE	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)
AUG 27...	.00	.1	.00	.0	.00	.0	.00	.0	.00	.0	.00

DATE	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MA- TERIAL (UG/KG)
AUG 27...	.0	0	0	.00	.0	.10	0	.00	0	.00	0

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM
SEP 23...	1345	362	17.5	140	17	22	30	56	65	85	96	100

12508990 YAKIMA RIVER AT MABTON, WA

LOCATION.--Lat 46°13'53", long 119°59'54", in SW¼SW¼ sec.30, T.9 N., R.23 E., Yakima County, Hydrologic Unit 17030003, on right bank under county highway bridge, at east boundary of Yakima Indian Reservation, 1.1 mi (1.8 km) north of Mabton, and at mile 59.8 (96.2 km).

DRAINAGE AREA.--5,359 mi² (13,880 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 643 ft (196.0 m), from topographic map.

REMARKS.--Records good. Flow affected by storage in five reservoirs and by diversions above station for irrigation above and below station of about 424,000 acres (1,720 km²) and by return flow from irrigated area.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,200 ft³/s (1,050 m³/s) Jan. 17, 1974, gage height, 15.30 ft (4.663 m); minimum daily, 710 ft³/s (20.1 m³/s) July 13, 27, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,800 ft³/s (816 m³/s) Dec. 6, gage height, 12.72 ft (3.877 m); minimum, 1,310 ft³/s (37.1 m³/s) July 30, gage height, 0.74 ft (0.226 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	2680	3900	10800	8100	3350	5120	4320	5390	3820	1650	1880
2	2160	2690	4800	10400	7950	3220	5120	5240	4880	3790	1820	1740
3	1950	2720	12000	10200	7780	3170	5050	7590	3970	3430	2080	1650
4	1840	2950	18000	9800	7670	3010	5050	8490	2940	3250	2130	1640
5	1780	3300	25000	9700	7300	2940	5240	7630	2460	3360	1880	1760
6	1770	3400	26600	9600	6770	2870	5690	6810	1950	3410	1990	1780
7	1850	3450	19700	9300	6100	2920	6710	6270	1770	3510	2060	1950
8	1920	3450	14700	9200	5690	2950	7070	6450	1650	3850	2750	2000
9	1890	3200	12900	8500	5640	2690	8310	7710	1920	4850	2980	1930
10	1850	3200	14000	7700	5500	2900	9580	9470	2380	5600	2660	1930
11	1950	3100	14300	7300	5140	3590	9510	10500	2660	5100	2270	1900
12	2010	3000	13500	7200	4850	3740	10300	10100	2590	4740	1920	1920
13	1950	2900	12700	7000	5140	3590	10500	8400	2450	4340	1730	1900
14	1890	2900	12100	6400	5120	3540	9770	7990	2240	3890	1860	1920
15	2000	2900	11600	6950	4760	3440	9110	8250	1900	2860	2130	1920
16	2650	3100	11500	8250	4490	2980	8440	7630	1650	2300	2480	2180
17	2680	3800	11200	11400	4560	3090	7730	7240	1810	1970	2830	2140
18	3170	3700	10600	12200	4600	3570	7240	7260	2690	1920	2680	2100
19	3040	3500	10300	10500	4440	4040	6870	6430	3200	1990	2480	2080
20	2980	3300	10100	9070	4230	4130	5790	6100	3700	1780	2160	2080
21	3300	3200	10500	8530	4250	4090	6180	5600	4550	1560	2100	2010
22	3030	3150	10200	8360	3940	3990	6100	5670	4370	1480	2040	2000
23	2750	3100	9210	8010	3800	3570	5750	6140	3840	1460	1900	1950
24	2650	3100	8120	7990	3720	3510	5580	6710	3660	1640	1720	1890
25	2590	3200	8380	7970	3640	3610	5350	6830	4160	1740	1690	1920
26	2570	3500	8380	7710	3610	3740	5310	6310	4140	1770	1970	1960
27	2630	4200	9140	7590	3560	3840	5080	5890	3960	1600	2140	2010
28	2560	4800	9820	8180	3540	4110	4250	6270	3670	1460	2170	1990
29	2500	4400	9490	8730	3460	3990	3800	6350	3520	1390	2260	1950
30	2520	4100	9650	8510	---	3750	3820	6080	3490	1390	2210	1900
31	2620	---	10500	8310	---	4040	---	5810	---	1560	2060	---
TOTAL	72850	99990	372890	271360	149350	107970	199420	217540	93560	86810	66800	57980
MEAN	2350	3333	12030	8754	5150	3483	6647	7017	3119	2800	2155	1933
MAX	3300	4800	26600	12200	8100	4130	10500	10500	5390	5600	2980	2180
MIN	1770	2680	3900	6400	3460	2690	3800	4320	1650	1390	1650	1640
AC-FT	144500	198300	739600	538200	296200	214200	395500	431500	185600	172200	132500	115000

CAL YR 1975 TOTAL 1797840 MEAN 4926 MAX 26600 MIN 1170 AC-FT 3566000
WTR YR 1976 TOTAL 1796520 MEAN 4909 MAX 26600 MIN 1390 AC-FT 3563000

NOTE.--No gage-height record Nov. 5 to Dec. 5.

12510500 YAKIMA RIVER AT KIONA, WA
(National Stream Quality Accounting Network Station)

LOCATION.--Lat 46°15'13", long 119°28'37", in SE¼NE¼ sec.19, T.9 N., R.27 E., Benton County, Hydrologic Unit 17030003, on left bank just upstream from abandoned highway bridge pier at Kiona, 0.1 mi (0.2 km) upstream from highway bridge, 3.6 mi (5.8 km) downstream from Corral Canyon Creek, 5.0 mi (8.0 km) downstream from intake of Kiona Canal, and at mile 29.9 (48.1 km).

DRAINAGE AREA.--5,615 mi² (14,543 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August to December 1895 (gage heights only, fragmentary), August 1896 to March 1915, February 1933 to current year.

REVISED RECORDS.--WSP 214: 1905. WSP 1122: 1934(M). WSP 1216: 1949-50. WSP 1286: 1907(M), 1909, 1936. WSP 1933· Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 454.41 ft (138.504 m) above mean sea level. Prior to Mar. 31, 1915, nonrecording gages at approximately same site and datum. Feb. 6, 1933, to July 26, 1934, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records excellent. Diversions above station for irrigation of about 424,000 acres (1,720 km²). Some regulation by diversions and by Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes. The Kiona Canal bypasses station with a mean flow of approximately 23 ft³/s (0.65 m³/s) for irrigation of about 1,100 acres (4.5 km²) below station. Diversion by the Kennewick Canal, which began in August 1956, was 100,580 acre-ft (124 hm³) during the current water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,000 ft³/s (1,900 m³/s) Dec. 23, 1933, gage height, 21.57 ft (6.575 m), from high-water marks; minimum observed, 105 ft³/s (2.97 m³/s) Sept. 11, 1906, gage height, 2.35 ft (0.716 m), datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,300 ft³/s (801 m³/s) Dec. 6, gage height, 16.52 ft (5.035 m); minimum, 1,330 ft³/s (37.7 m³/s) Oct. 15, gage height, 3.50 ft (1.067 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	2700	3910	11000	8320	3450	5190	4180	5710	3840	1710	2190
2	1970	2760	4880	10700	8120	3430	5400	4920	5320	3970	1860	2040
3	2050	2710	11800	10400	7940	3350	5320	6870	4510	3700	2100	1920
4	1860	2860	17900	10300	7730	3310	5290	8590	3490	3390	2210	1870
5	1820	3300	24500	10100	7490	3150	5440	8030	2880	3430	2140	1910
6	1800	3460	27200	10000	6930	3070	5740	7220	2590	3500	2070	2030
7	1810	3490	20900	9800	6390	3100	6600	6600	2360	3530	2170	2080
8	1860	3430	15800	9680	5800	3140	7160	6600	2080	3800	2600	2190
9	1930	3280	13800	9420	5670	3020	7960	7600	2090	4470	3240	2190
10	1880	3210	14100	8050	5610	3010	9340	9190	2570	5710	2940	2130
11	1900	3110	14700	7490	5350	3530	9720	10300	2880	5410	2620	2160
12	2040	3020	14200	7490	5020	3940	10200	10400	2930	5010	2190	2160
13	2010	2930	13400	7240	5170	3800	10700	8930	2800	4590	1960	2140
14	1940	2910	12900	6810	5320	3730	10200	8100	2600	4230	1960	2150
15	1970	2900	12300	6900	4950	3700	9590	8350	2290	3320	2180	2160
16	2740	3130	12200	7730	4720	3310	8870	7960	2050	2630	2450	2280
17	3010	3950	11900	10500	4690	3250	8080	7430	2020	2240	2940	2390
18	3370	3830	11200	12500	4720	3670	7530	7410	2630	2090	2920	2360
19	3400	3610	11000	11400	4650	4300	7120	6760	3410	2160	2790	2290
20	3230	3370	10600	9780	4410	4500	6270	6280	3740	2090	2470	2340
21	3540	3260	10800	8960	4410	4380	6070	5720	4480	1830	2300	2270
22	3470	3260	10700	8710	4150	4390	6330	5800	4750	1680	2290	2200
23	2990	3200	9990	8350	4010	3990	5850	6010	4250	1630	2190	2180
24	2790	3160	8620	8100	3910	3920	5740	6710	3880	1660	1990	2090
25	2720	3180	8600	8150	3870	3880	5500	6980	4190	1830	1940	2100
26	2670	3850	8730	7920	3800	3970	5400	6650	4390	1910	2070	2120
27	2680	4510	8930	7730	3810	3970	5190	6120	4260	1850	2320	2200
28	2630	4930	10100	7850	3730	4320	4650	6350	3990	1680	2390	2190
29	2570	4670	9950	8570	3660	4270	3950	6570	3740	1540	2460	2170
30	2560	4210	9850	8770	---	3990	3870	6330	3630	1480	2500	2130
31	2610	---	10600	8530	---	4160	---	6120	---	1550	2360	---
TOTAL	75620	102180	386060	278930	154350	115000	204270	221080	102510	91750	72330	64630
MEAN	2439	3406	12450	8998	5322	3710	6809	7132	3417	2960	2333	2154
MAX	3540	4930	27200	12500	8320	4500	10700	10400	5710	5710	3240	2390
MIN	1800	2700	3910	6810	3660	3010	3870	4180	2020	1480	1710	1870
AC-FT	150000	202700	765700	553300	306200	228100	405200	438500	203300	182000	143500	128200

CAL YR 1975 TOTAL 1858220 MEAN 5091 MAX 27200 MIN 1260 AC-FT 3686000
WTR YR 1976 TOTAL 1868710 MEAN 5106 MAX 27200 MIN 1480 AC-FT 3707000

12510500 YAKIMA RIVER AT KIONA, WA--Continued

WATER-QUALITY RECORDS

LOCATION.--Water quality data obtained at the highway bridge 0.1 mi (0.2 km) downstream from gage.

PERIOD OF RECORD.--Water years 1953 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1952 to September 1969 (composite samples), October 1969 to current year.
WATER TEMPERATURES: December 1952 to current year.

REMARKS.--Specific conductance samples and water temperatures collected once daily by observer.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum observed, 674 micromhos Dec. 3, 1970; minimum observed, 90 micromhos June 4, 1975.
WATER TEMPERATURES: Maximum, 29.0°C July 18, 1960, July 12, 1961; minimum, 0.0°C on several days during winter months most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 341 micromhos Oct. 2, 3; minimum observed, 110 micromhos Dec. 11, 16.
WATER TEMPERATURES: Maximum observed, 24.5°C Aug. 1; minimum observed, 0.0°C Feb. 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
OCT 21...	1045	3530	275	8.0	11.5	4	18400	360	2300	100	0	26
NOV 18...	1005	3830	217	7.8	5.0	6	19600	1600	53000	82	0	21
DEC 17...	1200	2000	115	7.7	3.4	10	--	160	2300	48	0	12
JAN 21...	1010	9040	140	7.4	2.5	10	2700	100	2000	52	0	13
FEB 13...	0940	5100	156	7.9	4.1	8	160000	100	74000	72	0	18
MAR 16...	1045	3240	193	8.3	7.6	4	14000	10000	46	78	0	21
APR 19...	1330	7100	134	--	10.3	10	940	38	100	52	0	13
MAY 11...	1150	10300	110	7.2	12.5	17	110	660	540	46	0	12
JUN 15...	1115	2290	234	7.6	16.8	9	90	37	28	86	0	21
JUL 12...	1330	5000	171	7.8	18.3	15	480	160	660	63	0	16
AUG 20...	1510	2440	270	7.0	20.5	9	50000	460	380	100	0	27
SEP 21...	1030	2170	288	8.1	18.1	6	9000	882	8530	110	0	28

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT 21...	9.4	17	3.3	147	121	2.4	15	8.0	.2	23	178	174
NOV 18...	7.2	13	2.4	110	90	2.8	12	4.3	.2	20	149	134
DEC 17...	4.4	6.0	1.1	60	49	1.9	4.9	3.0	.1	14	73	75
JAN 21...	4.7	7.4	1.2	72	59	4.6	5.4	2.5	.1	18	95	88
FEB 13...	6.5	10	2.2	89	73	1.8	8.5	4.0	.1	18	108	111
MAR 16...	6.2	11	2.1	101	83	.8	9.7	4.4	.1	21	116	125
APR 19...	4.8	6.7	1.5	74	61	--	6.2	2.4	.1	18	87	89
MAY 11...	3.9	6.0	1.4	66	54	6.7	4.6	1.5	.1	16	72	76
JUN 15...	8.2	14	2.3	122	100	4.9	14	5.3	.2	20	154	145
JUL 12...	5.6	8.8	1.6	84	69	2.1	7.0	3.2	.1	17	108	101
AUG 20...	8.3	15	2.9	134	110	21	15	5.3	.2	21	155	161
SEP 21...	10	18	3.4	146	120	1.9	16	6.6	.2	23	182	177

B Results based upon colony counts outside the ideal range.

12510500 YAKIMA RIVER AT KIONA, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL NONFILTRABLE RESIDUE (MG/L)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT 21...	--	--	1.0	.02	1.0	.08	.42	.14	.08	33	315	83
NOV 18...	--	--	.70	.01	.71	.08	.39	.10	.06	26	269	88
DEC 17...	--	--	.38	.01	.39	.07	.28	.09	.03	83	2690	61
JAN 21...	--	--	.35	.01	.36	.10	.31	.10	.05	55	1340	62
FEB 13...	--	--	.56	.01	.57	.06	.35	.09	.04	32	441	72
MAR 16...	--	--	.49	.01	.50	.05	.27	.07	.06	16	140	77
APR 19...	--	--	.32	.01	.33	.10	.47	.08	.03	80	1530	71
MAY 11...	--	--	.46	.02	.47	.08	.25	.09	.09	180	5010	73
JUN 15...	--	--	.80	.02	.82	.05	.36	.11	.06	26	161	94
JUL 12...	--	12	.57	.02	.58	.08	.45	.12	.05	67	904	88
AUG 20...	19	--	.70	.02	.72	.04	.41	.13	.08	32	211	--
SEP 21...	18	--	1.2	.02	1.2	.08	.42	.14	.08	25	146	84

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT 21...	1045	3	2	10	0	10	0	<50	0	0	13	730
JAN 21...	1010	1	0	<10	0	0	0	<50	1	10	1	1300
APR 19...	1330	0	0	<10	0	0	0	<50	0	10	2	1300
JUL 12...	1330	1	2	<10	0	0	0	<50	0	<10	2	1800

DATE	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 21...	40	100	4	60	20	.0	.0	0	0	90	0	--
JAN 21...	50	<100	4	40	0	.0	.0	0	0	40	0	3.1
APR 19...	20	<100	2	30	0	.0	.0	0	0	0	0	2.4
JUL 12...	30	<100	2	60	10	.0	.0	0	0	10	0	1.3

DATE	TIME	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ATRAZINE (UG/L)	TOTAL CHLORDANE (UG/L)	CHLORDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MATERIAL (UG/KG)	P,P' DDD IN BOTTOM MATERIAL (UG/KG)	TOTAL DDE (UG/L)
MAY , 1975 22...	1155	ND	ND	--	ND	ND	ND	--	1.2	ND
SEP 16...	1250	ND	ND	--	ND	ND	ND	--	1.5	ND
DEC 17...	1200	ND	--	ND	ND	--	ND	--	--	ND
FEB , 1976 13...	0940	ND	--	ND	ND	--	ND	--	--	ND
MAY 11...	1150	ND	ND	ND	ND	ND	ND	ND	6.7	ND
SEP 21...	1200	ND	--	ND	ND	--	ND	--	--	ND

ND None detected.

12510500 YAKIMA RIVER AT KIONA, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DDE IN BOTTOM MA- TERIAL (UG/KG)	P,P' DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	P,P' DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- ELDRIN (UG/L)	DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)
MAY , 1975										
22...	--	2.0	ND	--	.7	ND	ND	ND	.1	ND
SEP										
16...	2.5	--	ND	1.1	--	ND	ND	ND	.1	ND
DEC										
17...	--	--	ND	--	--	ND	--	ND	--	ND
FEB , 1976										
13...	--	--	ND	--	--	ND	--	ND	--	ND
MAY										
11...	23	--	ND	2.8	20	ND	ND	ND	1.1	ND
SEP										
21...	--	--	ND	--	--	ND	--	ND	--	ND

DATE	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)
MAY , 1975										
22...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEP										
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC										
17...	--	ND	--	ND	--	ND	--	ND	--	ND
FEB , 1976										
13...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
11...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEP										
21...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METH- OXY- CHLOR (UG/L)	METHOX- YCHLOR IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL (UG/L)
MAY , 1975										
22...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
SEP										
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
DEC										
17...	--	ND	--	ND	--	ND	--	ND	--	--
FEB , 1976										
13...	--	ND	--	ND	--	ND	--	ND	--	--
MAY										
11...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
SEP										
21...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MA- TERIAL (UG/KG)
MAY , 1975										
22...	ND	ND	ND	ND	--	--	--	--	--	--
SEP										
16...	ND	ND	ND	ND	--	--	--	--	--	--
DEC										
17...	ND	--	ND	--	ND	--	ND	--	ND	--
FEB , 1976										
13...	ND	--	ND	--	ND	--	ND	--	ND	--
MAY										
11...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEP										
21...	ND	--	ND	--	ND	--	ND	--	ND	--

ND None detected.

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

3,000 CELLS/ML

OCT. 21, 1975 1045 HOURS		ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...HYDRODICTYACEAE				
	L	....PEDIASTRUM			0	
		...OOCYSTACEAE				
		....ANKISTRODESMUS		54	2	
		...SCENEDESMACEAE				
	D	....SCENEDESMUS		650	22	
			TOTALS	710	24	0.391=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		110	4	
		....MELOSIRA		54	2	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		110	4	
		....COCCONEIS		54	2	
		....RHOICOSPHENIA		160	5	
		...CYMBELLACEAE				
	L	....AMPHORA			0	
		....CYMBELLA		110	4	
		...DIATOMACEAE				
		....DIATOMA		54	2	
		...FRAGILARIACEAE				
		....SYNEDRA		160	5	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		54	2	
		...NAVICULACEAE	NAVICULOID			
	D	....NAVICULA		810	27	
		...NITZSCHIACEAE				
	D	....NITZSCHIA		600	20	
			TOTALS	2,300	77	2.722=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE			
		.MYXOPHYCEAE				
		..OSCILLATORIALES	FILAMENTOUS			
		...OSCILLATORIACEAE				
	L	....OSCILLATORIA			0	

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 0.789
CLASS 0.789
ORDER 1.072
FAMILY 2.751
GENERA 2.960

SAMPLING METHOD- EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                              IDENTIFICATION OF PHYTOPLANKTON

                                       7,800 CELLS/ML

NOV. 18, 1975   _ORGANISM__NAME_______________  _COMMON__NAME______  CELLS/ML      PER_CENT
   1005 HOURS
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE               DIATOMS
                 ..CENTRALES                      CENTRIC
                 ...COSCINODISCACEAE
                 ....CYCLOTELLA                                          360          5
                 ....MELOSIRA                                             79          1
                 ..PENNALES                       PENNATE
                 ...ACHNANTHACEAE
                 ....ACHNANTHES                                          320          4
                 ....RHOICOSPHENIA                                        39          1
                 ...CYMBELLACEAE
                 ....CYMBELLA                                            280          4
                 ...DIATOMACEAE
                 ....DIATOMA                                             200          3
                 ...FRAGILARIACEAE
               L ....ASTERIONELLA                                                     0
                 ....FRAGILARIA                                          120          2
                 ....SYNEDRA                                              79          1
                 ...GOMPHONEMATACEAE
                 ....GOMPHONEMA                                          160          2
                 ...NAVICULACEAE                  NAVICULOID
               D ....NAVICULA                                          1,200         15
                 ...NITZSCHIACEAE
                 ....NITZSCHIA                                        _1,000        _13
                                                            TOTALS     3,800         51         2.786=DIVERSITY

                 CYANOPHYTA                       BLUE-GREEN ALGAE
                 .MYXOPHYCEAE
                 ..OSCILLATORIALES                FILAMENTOUS
                 ...OSCILLATORIACEAE
               D ....OSCILLATORIA                                     _3,900        _51
                                                            TOTALS     3,900         51         0.000=DIVERSITY

               NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                     L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                     ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                     DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                          PHYL/DIV 1.000
                                             CLASS 1.000
                                             ORDER 1.251
                                            FAMILY 2.286
                                            GENERA 2.372
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SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

590 CELLS/ML

DEC. 17, 1975 1200 HOURS		_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		12	2	
		....MELOSIRA		49	8	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		49	8	
		....COCCONEIS		37	6	
		....RHOICOSPHENIA		12	2	
		...CYMBELLACEAE				
		....CYMBELLA		62	10	
	L	....EPITHEMIA			0	
	L	....RHOPALODIA			0	
		...DIATOMACEAE				
		....DIATOMA		12	2	
		...FRAGILARIACEAE				
	L	....ASTERIONELLA			0	
	L	....FRAGILARIA			0	
	D	....SYNEDRA		110	19	
		...GOMPHONEMATACEAE				
		....GOMPHONEIS		12	2	
		....GOMPHONEMA		74	13	
		...NAVICULACEAE	NAVICULOID			
	D	....NAVICULA		140	23	
		...NITZSCHIACEAE				
		....NITZSCHIA		25	4	
		...SURIRELLACEAE				
	L	....CYMATOPLEURA			0	
		...TABELLARIACEAE				
	L	....TABELLARIA			0	
			TOTALS	590	99	3.159=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE			
		.MYXOPHYCEAE				
		..CHROOCOCCALES	COCCOID			
		...CHROOCOCCACEAE				
		....ANACYSTIS				
	L	.....A.INSERTA			0	

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
ORDER 0.482
FAMILY 2.763
GENERA 3.159

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1.000 CELLS/ML

JAN. 21, 1976 1010 HOURS	_ORGANISM__NAME_	_COMMON__NAME_	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		7	1	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		210	20	
	....MELOSIRA		7	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		74	7	
	....COCCONEIS		22	2	
	....RHOICOSPHENIA		7	1	
	...CYMBELLACEAE				
	....CYMBELLA		37	4	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		15	1	
	...FRAGILARIACEAE				
	....FRAGILARIA		15	1	
	....SYNEDRA		15	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		37	4	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		7	1	
	....NAVICULA		89	9	
	...NITZSCHIACEAE				
	....HANTZSCHIA		7	1	
	....NITZSCHIA		150	14	
	...SURIRELLACEAE				
	....SURIRELLA		15	1	
	...TABELLARIACEAE				
	....TABELLARIA		7	1	
		TOTALS	720	70	3.164=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....LYNGBYA		320	31	
		TOTALS	320	31	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....TRACHELOMONAS			0	

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.890
CLASS	0.890
ORDER	1.553
FAMILY	2.822
GENERA	3.082

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

2,000 CELLS/ML

FEB. 13, 1976 0940 HOURS		_ORGANISM__NAME_____________	_COMMON__NAME______	CELLS/ML	PER_CENT	
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE		340	17	
	D	....CYCLOTELLA		97	5	
		....MELOSIRA				
		..PENNALES	PENNATE			
		...ACHNANTHACEAE		97	5	
		....ACHNANTHES		24	1	
		....COCCONEIS		24	1	
		....RHOICOSPHENIA				
		...CYMBELLACEAE		97	5	
		....CYMBELLA		24	1	
		....RHOPALODIA				
		...DIATOMACEAE		24	1	
		....DIATOMA				
		...FRAGILARIACEAE		220	11	
		....FRAGILARIA				
		...GOMPHONEMATACEAE		48	2	
		....GOMPHONEMA				
		...NAVICULACEAE	NAVICULOID	240	12	
		....NAVICULA				
		...NITZSCHIACEAE		220	11	
		....NITZSCHIA	TOTALS	1,500	72	3.081=DIVERSITY
		CYANOPHYTA	BLUE-GREEN ALGAE			
		.MYXOPHYCEAE				
		..OSCILLATORIALES	FILAMENTOUS			
		...OSCILLATORIACEAE		530	27	
	D	....LYNGBYA	TOTALS	530	27	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.839
CLASS 0.839
ORDER 1.484
FAMILY 2.790
GENERA 3.093

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                                   IDENTIFICATION OF PHYTOPLANKTON

                                          7,400 CELLS/ML

MAR. 16, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML      PER_CENT
  1045 HOURS
               CHLOROPHYTA                    GREEN ALGAE
               .CHLOROPHYCEAE
               ..VOLVOCALES
               ...HAEMATOCOCCACEAE
               ....HAEMATOCOCCUS
                                                                   ___270         _4
                                                         TOTALS     270           4           0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE             DIATOMS
               ..PENNALES                     PENNATE
               ...FRAGILARIACEAE
             L ....H.ARCUS                                                         0
               ..CENTRALES                    CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                       1,200         16
               ..PENNALES                     PENNATE
               ...ACHNANTHACEAE
             L ....ACHNANTHES                                                      0
               ....COCCONEIS                                         140           2
               ...CYMBELLACEAE
               ....CYMBELLA                                          410           5
               ...DIATOMACEAE
             L ....DIATOMA                                                         0
               ...FRAGILARIACEAE
               ....FRAGILARIA                                        140           2
             L ....SYNEDRA                                                         0
               ...GOMPHONEMATACEAE
               ....GOMPHONEMA                                        270           4
               ...NAVICULACEAE                NAVICULOID
             D ....NAVICULA                                         1,100         15
               ...NITZSCHIACEAE
               ....NITZSCHIA                                         410           5
               ...SURIRELLACEAE
             L ....SURIRELLA                                       ______         _0
                                                         TOTALS     3,700         49          2.383=DIVERSITY

               CYANOPHYTA                     BLUE-GREEN ALGAE
               .MYXOPHYCEAE
               ..OSCILLATORIALES              FILAMENTOUS
               ...OSCILLATORIACEAE
             D ....OSCILLATORIA
                                                                   _3,500         _47
                                                         TOTALS     3,500         47          0.000=DIVERSITY

             NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                     PHYL/DIV 1.189
                                        CLASS 1.189
                                        ORDER 1.640
                                       FAMILY 2.359
                                       GENERA 2.359
                  SAMPLING METHOD - EDI
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12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

2,400 CELLS/ML

APR. 19, 1976 1330 HOURS		_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...OOCYSTACEAE				
		....ANKISTRODESMUS		42	2	
			TOTALS	42	2	0.000=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..PENNALES	PENNATE			
		...FRAGILARIACEAE				
		....H.ARCUS		42	2	
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
	D	....CYCLOTELLA		620	26	
		....MELOSIRA		210	9	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....COCCONEIS		42	2	
		...CYMBELLACEAE				
		....CYMBELLA		170	7	
		...DIATOMACEAE				
		....DIATOMA		42	2	
		...FRAGILARIACEAE				
		....ASTERIONELLA		83	3	
		....SYNEDRA		83	3	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		83	3	
		...MERIDIONACEAE				
		....MERIDION		42	2	
		...NAVICULACEAE	NAVICULOID			
		....CALONEIS		42	2	
	D	....NAVICULA		420	17	
		...NITZSCHIACEAE				
	D	....NITZSCHIA		460	19	
		...SURIRELLACEAE				
		....SURIRELLA		42	2	
			TOTALS	2,400	99	3.105=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 0.126
CLASS 0.126
ORDER 1.159
FAMILY 2.745
GENERA 3.177

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

2.500 CELLS/ML

MAY 11, 1976 1150 HOURS		_ORGANISM__NAME______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...CHARACIACEAE				
		....SCHROEDERIA		13	1	
		...MICRACTINIACEAE				
		....MICRACTINIUM		320	13	
		...OOCYSTACEAE				
		....ANKISTRODESMUS		39	2	
		...SCENEDESMACEAE				
		....ACTINASTRUM		52	2	
		....SCENEDESMUS		52	2	
			TOTALS	480	20	1.511=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..PENNALES	PENNATE			
		...FRAGILARIACEAE				
		....H.ARCUS		13	1	
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		300	12	
		....MELOSIRA		270	11	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		100	4	
		....COCCONEIS		65	3	
		...CYMBELLACEAE				
		....CYMBELLA		120	5	
		...DIATOMACEAE				
		....DIATOMA		52	2	
		...FRAGILARIACEAE				
		....ASTERIONELLA		13	1	
		....FRAGILARIA		52	2	
		....SYNEDRA		26	1	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		100	4	
		...NAVICULACEAE	NAVICULOID			
		....CALONEIS		13	1	
		....GYROSIGMA		13	1	
	D	....NAVICULA		420	17	
		...NITZSCHIACEAE				
	D	....NITZSCHIA		440	18	
		...SURIRELLACEAE				
		....SURIRELLA		26	1	
			TOTALS	2,000	84	3.200=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 0.705
CLASS 0.705
ORDER 1.441
FAMILY 3.130
GENERA 3.581

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

5.000 CELLS/ML

JUNE 15, 1976
1115 HOURS

	_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		71	1	
	...SCENEDESMACEAE				
	....SCENEDESMUS		280	6	
		TOTALS	360	7	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		2.000	39	
	....MELOSIRA		210	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		360	7	
	....COCCONEIS		71	1	
	...CYMBELLACEAE				
	....CYMBELLA		71	1	
	...DIATOMACEAE				
	....DIATOMA		71	1	
	...GOMPHONEMATACEAE				
L	....GOMPHONEMA			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		360	7	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1.400	28	
	...SURIRELLACEAE				
	....SURIRELLA		71	1	
	...TABELLARIACEAE				
	....TABELLARIA		71	1	
		TOTALS	4.700	90	2.271=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.367
CLASS 0.367
ORDER 1.295
FAMILY 2.275
GENERA 2.530

SAMPLING METHOD - EDI

7.000 CELLS/ML

JULY 12, 1976
1330 HOURS

	_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		470	7	
	....MELOSIRA		610	9	
	...RHIZOSOLENIACEAE				
	....RHIZOSOLENIA		68	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....RHOICOSPHENIA		270	4	
	...CYMBELLACEAE				
	....CYMBELLA		340	5	
	...DIATOMACEAE				
	....DIATOMA		200	3	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		410	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1.300	18	
	...SURIRELLACEAE				
	....SURIRELLA		140	2	
		TOTALS	3.800	55	2.758=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		140	2	
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....LYNGBYA		1.400	19	
D	....OSCILLATORIA		1.700	24	
		TOTALS	3.200	45	1.203=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.994
CLASS 0.994
ORDER 1.592
FAMILY 2.456
GENERA 3.043

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

5,600 CELLS/ML

AUG. 20, 1976 1015 HOURS	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....SCENEDESMUS		230	4	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		57	1	
		TOTALS	280	5	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		400	7	
	....MELOSIRA		340	6	
	..PENNALES	PENNATE			
	...DIATOMACEAE				
	....DIATOMA		110	2	
	...FRAGILARIACEAE				
	....SYNEDRA		230	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		57	1	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		280	5	
	...NITZSCHIACEAE				
D	....NITZSCHIA		910	16	
		TOTALS	2,300	41	2.412=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		2,900	53	
		TOTALS	2,900	53	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 1.230
CLASS 1.230
ORDER 1.644
FAMILY 2.144
GENERA 2.276

SAMPLING METHOD - EDI

12510500 YAKIMA RIVER AT KIONA, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                                   IDENTIFICATION OF PHYTOPLANKTON

                                           7.600 CELLS/ML

SEPT. 21, 1976  _ORGANISM__NAME_______________  _COMMON__NAME______  CELLS/ML    PER_CENT
  1030 HOURS
                CHLOROPHYTA                     GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
              L ....ANKISTRODESMUS                                                  0
                ...SCENEDESMACEAE
                ....SCENEDESMUS                                         ___310     _4
                                                          TOTALS         340       4        0.469=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE              DIATOMS
                ..CENTRALES                     CENTRIC
                ...COSCINODISCACEAE
                ....CYCLOTELLA                                           510        7
                ....MELOSIRA                                             270        4
                ..PENNALES                      PENNATE
                ...ACHNANTHACEAE
                ....ACHNANTHES                                           240        3
                ....COCCONEIS                                            100        1
                ....RHOICOSPHENIA                                        170        2
                ...CYMBELLACEAE
                ....CYMBELLA                                             140        2
                ...DIATOMACEAE
                ....DIATOMA                                              100        1
                ...GOMPHONEMATACEAE
                ....GOMPHONEMA                                           140        2
                ...NAVICULACEAE                 NAVICULOID
                ....NAVICULA                                             990       13
                ...NITZSCHIACEAE
                ....NITZSCHIA                                          ___780      _10
                                                          TOTALS       3.400       45       2.853=DIVERSITY

                CYANOPHYTA                      BLUE-GREEN ALGAE
                .MYXOPHYCEAE
                ..CHROOCOCCALES                 COCCOID
                ...CHROOCOCCACEAE
              D ....ANACYSTIS                                          1.200       16
                ..OSCILLATORIALES               FILAMENTOUS
                ...NOSTOCACEAE
                ....APHANIZOMENON                                        140        2
                ...OSCILLATORIACEAE
              D ....OSCILLATORIA                                       _2.400      _32
                                                          TOTALS       3.800       50       1.103=DIVERSITY

                EUGLENOPHYTA                    EUGLENOIDS
                .EUGLENOPHYCEAE
                ..EUGLENALES
                ...EUGLENACEAE
              L ....TRACHELOMONAS                                      ______      _0
                                                          TOTALS          34        0       0.000=DIVERSITY

                NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                      L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                      ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
                      DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                        PHYL/DIV 1.254
                                           CLASS 1.254
                                           ORDER 2.053
                                          FAMILY 2.919
                                          GENERA 3.117
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SAMPLING METHOD - EDI

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m²)		Chlorophyll a (mg/m²)	Chlorophyll b (mg/m²)	Biomass pigment ratio	Sampling method
		Dry weight	Ash weight				
Oct. 21	25	7.7	4.9	4.8	0.0	57	Polyethylene strip
Jan. 21	25	0.0	0.0	0.0	0.0	0.0	
Apr. 19	34	7.30	4.69	2.96	0.120	880	
July 12	27	3.69	1.92	16.6	2.48	110	

12510500 YAKIMA RIVER AT KIONA, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340	317	190	114	128	201	173	180	149	178	340	281
2	341	305	127	114	128	197	172	181	150	180	338	279
3	341	300	126	114	128	201	154	154	152	178	312	278
4	316	295	111	118	132	208	152	153	157	178	312	306
5	311	273	118	118	131	214	152	155	170	201	311	306
6	328	261	148	115	139	214	146	129	171	201	280	305
7	331	241	145	117	141	226	146	130	267	202	278	322
8	335	242	117	117	142	229	134	130	268	195	268	321
9	329	242	114	120	161	221	133	114	266	192	272	321
10	329	243	114	120	162	221	134	114	285	192	272	297
11	326	251	110	141	160	223	132	114	283	---	266	295
12	331	252	111	140	160	224	118	129	285	171	265	299
13	331	257	114	140	160	190	119	119	225	---	262	303
14	321	262	111	139	162	188	120	126	224	187	315	303
15	329	268	111	141	170	192	120	126	225	187	312	303
16	331	267	110	144	174	195	125	124	252	186	314	302
17	313	247	115	143	170	192	125	119	249	230	282	295
18	---	209	118	136	173	208	134	134	275	230	276	298
19	---	211	123	136	180	208	135	134	273	230	279	290
20	---	232	117	136	179	191	134	135	202	280	270	290
21	275	231	113	140	177	166	153	154	202	282	255	285
22	---	235	114	138	178	172	150	150	205	285	256	295
23	---	235	125	138	183	172	151	149	142	290	290	298
24	299	236	132	139	182	173	149	142	148	288	290	298
25	324	237	129	138	195	179	154	144	148	290	289	300
26	320	236	130	139	194	179	155	144	145	297	318	300
27	325	201	128	133	196	180	159	137	145	298	320	300
28	320	185	121	133	196	172	157	138	143	295	320	310
29	315	176	120	134	196	171	157	148	180	310	289	310
30	317	181	120	128	---	171	181	147	180	315	290	310
31	317	---	114	128	---	172	---	149	---	315	290	---
MONTH	323	244	122	131	165	195	144	139	206	237	291	300
YEAR	MAX	341	MIN	110	MEAN	206						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	9.0	2.5	3.0	4.0	4.5	7.5	11.0	12.0	17.0	24.5	18.0
2	15.0	9.5	5.0	2.5	4.0	4.0	7.5	12.5	11.5	16.5	21.0	19.0
3	15.0	10.0	5.5	2.0	3.5	3.5	7.0	13.5	13.0	17.0	21.0	19.0
4	15.0	11.0	6.0	2.0	1.5	2.5	8.0	12.0	13.0	18.0	21.0	19.0
5	14.5	11.0	5.0	2.5	1.0	3.0	9.0	11.5	13.5	18.0	20.5	19.0
6	14.0	9.5	5.5	2.0	0.0	3.0	9.5	11.5	14.5	18.0	21.0	18.0
7	14.0	8.5	5.0	3.0	0.5	4.0	10.0	12.0	16.5	19.0	18.5	16.5
8	14.0	7.0	5.5	3.0	1.0	4.5	10.5	12.5	17.5	20.0	18.5	16.0
9	13.5	7.0	5.0	3.0	2.0	5.0	8.5	14.0	17.0	19.5	19.0	15.0
10	13.0	6.0	5.0	3.0	2.0	6.0	8.5	11.5	18.0	19.0	19.0	16.0
11	13.0	5.5	4.5	3.5	3.0	6.0	8.5	12.0	18.0	17.5	19.5	16.0
12	13.0	5.5	4.0	4.0	4.0	6.0	9.0	12.0	18.0	17.0	19.5	15.5
13	12.5	5.0	4.0	3.5	5.0	5.5	9.0	12.0	14.0	17.0	19.0	15.0
14	12.5	6.0	4.0	4.0	5.5	6.5	8.5	12.5	15.0	18.0	19.0	16.0
15	13.0	7.5	3.0	4.0	5.5	5.5	8.0	12.5	15.5	18.5	19.0	16.0
16	12.5	6.0	3.0	4.0	5.5	7.0	7.5	12.0	17.0	19.0	19.0	16.5
17	12.0	6.0	2.5	4.5	5.5	7.5	7.0	12.0	17.0	20.5	17.0	16.5
18	---	5.0	2.5	4.0	5.0	8.0	8.0	12.5	18.0	21.0	16.5	17.0
19	---	4.0	2.0	4.0	5.0	7.0	8.5	12.0	18.0	21.0	16.5	17.0
20	---	3.5	2.0	4.0	4.5	6.5	8.5	12.0	18.5	21.5	17.0	17.0
21	11.5	3.5	2.5	3.0	4.0	7.0	9.0	13.0	17.5	20.0	17.5	17.5
22	---	3.5	3.0	3.0	4.5	7.5	9.0	13.5	17.0	20.0	18.0	17.5
23	---	4.0	3.0	2.5	4.5	6.0	9.0	14.0	16.0	21.0	18.0	17.0
24	9.5	4.5	3.0	2.5	5.0	7.0	9.5	14.0	16.5	21.0	19.0	17.0
25	9.0	5.0	2.5	2.5	6.0	7.0	9.0	12.0	16.5	22.0	18.0	17.0
26	9.0	6.0	3.0	3.0	6.0	7.0	9.0	12.0	17.0	22.0	17.0	17.0
27	9.0	6.0	3.0	3.0	6.0	7.5	9.5	13.5	17.0	21.0	17.5	17.0
28	8.0	5.0	3.0	3.5	6.0	8.0	10.0	13.0	17.5	20.0	18.0	17.0
29	8.5	3.5	3.5	4.0	5.5	8.0	10.0	12.0	18.0	20.5	18.0	17.0
30	9.0	2.5	3.0	4.5	---	8.5	10.5	12.0	18.5	21.0	18.5	17.0
31	9.0	---	3.5	4.0	---	8.5	---	12.5	---	21.0	19.0	---
MONTH	12.0	6.0	3.5	3.5	4.0	6.0	9.0	12.5	16.0	19.5	19.0	17.0
YEAR	MAX	24.5	MIN	0.0	MEAN	10.5						

12512500 PROVIDENCE COULEE AT CUNNINGHAM, WA

LOCATION.--Lat 46°49'18", long 118°48'27", in NE¼NW¼ sec.4, T.15 N., R.32 E., Adams County, Hydrologic Unit 17020016, on right bank 10 ft (3.0 m) upstream from Burlington Northern bridge at Cunningham and 5 mi (8.0 km) upstream from Hatton Coulee.

DRAINAGE AREA.--27.8 mi² (72.0 km²).

PERIOD OF RECORD.--October 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,158.90 ft (353.233 m) above mean sea level.

REMARKS.--Records poor. No known regulation or diversion.

AVERAGE DISCHARGE.--24 years, 0.27 ft³/s (0.0076 m³/s), 195 acre-ft/yr (0.240 hm³/yr); median of yearly mean discharges, 0.062 ft³/s (0.0018 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft³/s (61.2 m³/s) Feb. 21, 1956, gage height, 10.04 ft (3.060 m); no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.2 ft³/s (0.062 m³/s) Jan. 16, gage height, 2.84 ft (0.866 m); maximum gage height, 3.22 ft (0.981 m) Sept. 24; no flow many days during the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04			0	0	0		0	.02	.31	0	.01
2	.11			0	0	0		0	.17	.34	0	.01
3	.06			0	0	0		0	.20	.34	0	.06
4	.29			0	0	0		0	.14	.41	0	.08
5	.14			0	0	0		0	.14	.38	.02	.06
6	0			0	0	0		.18	.17	.31	.08	.10
7	.04			0	0	0		.02	.20	.24	.05	.10
8	0			0	0	0		0	.12	.28	0	.10
9	0			0	0	.02		.04	.22	.20	0	.10
10	0			0	0	.23		0	.22	.17	0	.08
11	0			0	0	.04		.01	.24	.22	.01	.06
12	0			0	0	.23		.01	.24	.24	.01	.12
13	0			0	0	.23		0	.14	.22	0	.10
14	0			0	0	.10		0	.17	.20	.05	.08
15	0			0	.12	0		.04	.20	.22	.05	.14
16	0			.22	.43	0		.07	.28	.20	.05	.12
17	.02			0	.23	0		.06	.34	.08	.05	.14
18	0			0	.10	0		.05	.31	.02	.01	.14
19	0			0	0	0		.06	.31	0	0	.14
20	.28			0	0	0		.06	.31	0	0	.12
21	.18			0	0	0		.01	.34	.05	0	.12
22	.11			0	0	0		0	.38	.12	0	.12
23	0			0	0	0		0	.34	.12	.01	.17
24	0			0	0	0		0	.48	.05	0	.31
25	.03			0	0	0		0	.48	.12	.03	.17
26	.06			0	0	.01		0	.52	.10	.02	.20
27	0			0	0	2.0		.01	.48	.06	0	.12
28	0			0	0	.50		.14	.48	0	0	.12
29	0			0	0	.05		.14	.34	0	0	.12
30	0			0	---	.01		.06	.31	0	0	.08
31	0	---		0	---	0	---	.04	---	0	0	---
TOTAL	1.36	0	0	.22	.88	3.42	0	1.00	8.29	5.00	.44	3.39
MEAN	.044	0	0	.007	.030	.11	0	.032	.28	.16	.014	.11
MAX	.29	0	0	.22	.43	2.0	0	.18	.52	.41	.08	.31
MIN	0	0	0	0	0	0	0	0	.02	0	0	.01
AC-FT	2.7	0	0	.4	1.7	6.8	0	2.0	16	9.9	.9	6.7

CAL YR 1975 TOTAL 53.36 MEAN .15 MAX 14 MIN 0 AC-FT 106
WTR YR 1976 TOTAL 24.00 MEAN .066 MAX 2.0 MIN 0 AC-FT 48

12513000 ESQUATZEL COULEE AT CONNELL, WA

LOCATION.--Lat 46°39'31", long 118°52'03", in SE¼NW¼ sec.36, T.14 N., R.31 E., Franklin County, Hydrologic Unit 17020016, on right bank 500 ft (152 m) upstream from outlet of local sewage treatment plant, at Connell, 3.0 mi (4.8 km) downstream from left bank tributary, and 8.4 mi (13.5 km) downstream from Hatton Coulee.

DRAINAGE AREA.--234 mi^2 (606 km^2).

PERIOD OF RECORD.--January 1953 to current year.

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 820.68 ft (250.143 m) above mean sea level, unadjusted. Prior to Aug. 7, 1959, at site 0.3 mi (0.5 km) upstream at different datum, and Aug. 7, 1959, to July 8, 1967, at site 900 ft (274 m) downstream at present datum.

REMARKS.--Records good. No diversion. Published flows August 1959 to September 1964 include effluent from sewage treatment plant 500 ft (152 m) downstream; records adjusted to exclude effluent October 1964 to June 1967.

AVERAGE DISCHARGE.--24 years, 1.20 ft^3/s (0.0340 m^3/s), 869 acre-ft/yr (1.07 hm^3/yr), adjusted for effluent from sewage treatment plant 1959-64.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,560 ft^3/s (157 m^3/s) Feb. 21, 1956, gage height, 12.68 ft (3.865 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 59 ft^3/s (1.67 m^3/s) Jan. 15, gage height, 6.64 ft (2.024 m); no flow during most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0								
2				0								
3				0								
4				0								
5				0								
6				0								
7				0								
8				0								
9				0								
10				0								
11				0								
12				0								
13				0								
14				0								
15				10								
16				8.3								
17				.04								
18				0								
19				0								
20				0								
21				0								
22				0								
23				0								
24				0								
25				0								
26				0								
27				0								
28				0								
29				0								
30				0	---							
31		---		0	---		---		---			---
TOTAL	0	0	0	18.34	0	0	0	0	0	0	0	0
MEAN	0	0	0	.59	0	0	0	0	0	0	0	0
MAX	0	0	0	10	0	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	36	0	0	0	0	0	0	0	0

CAL YR 1975 TOTAL 231.88 MEAN .64 MAX 82 MIN 0 AC-FT 460
WTR YR 1976 TOTAL 18.34 MEAN .050 MAX 10 MIN 0 AC-FT 36

12513500 ESQUATZEL COULEE AT ELTOPIA, WA

LOCATION.--Lat 46°27'45", long 119°00'40", in SW¼SE¼ sec.2, T.11 N., R.30 E., Franklin County, Hydrologic Unit 17020016, on left bank 50 ft (15 m) upstream from Burlington Northern bridge at Eltopia, and 8.2 mi (13.2 km) upstream from Esquatzel Diversion.

DRAINAGE AREA.--551 mi² (1,427 km²), of which 168 mi² (435 km²) in the vicinity of Sulphur Lake is noncontributing.

PERIOD OF RECORD.--January 1953 to current year.

REVISED RECORDS.--WSP 1933: Drainage area. WDR WA-75-1: 1974.

GAGE.--Water-stage recorder. Altitude of gage is 580 ft (177 m), from topographic map.

REMARKS.--Records fair. Considerable regulation by natural pondage in Esquatzel Coulee near Mesa 9 mi (14.5 km) upstream. No known diversions. Summer flow started in August 1971. Prior to August 1971 most of the runoff above station entered a sump maintained by the Bureau of Reclamation near Mesa. Since removal of the sump, there has been continuous flow at the station except for the period Mar. 7-22, 1972.

AVERAGE DISCHARGE.--18 years (water years 1953-70) 0.88 ft³/s (0.0249 m³/s), 638 acre-ft/yr (0.789 hm³/yr).
6 years (water years 1971-76), 18.3 ft³/s (0.518 m³/s), 13,260 acre-ft/yr (16.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,740 ft³/s (106 m³/s) Feb. 22, 1956, gage height, 18.23 ft (5.557 m); no flow most of time Jan. 1953 to September 1971; no flow on several days in 1972 and 1976 water years.

EXTREMES FOR CURRENT YEAR: Maximum discharge, 56 ft³/s (1.59 m³/s) Oct. 6, 7, 8, 9; maximum gage height, 6.37 ft (1.942 m) Aug. 26; no flow part or all of each day Mar. 25, May 21-27, June 4-6, 8, 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	13	20	14	13	3.5	8.7	.53	7.9	24	10	25
2	48	13	20	15	13	3.5	7.3	.03	4.0	24	15	24
3	48	15	19	15	13	3.2	5.6	9.0	1.2	27	16	26
4	52	18	18	15	12	3.0	11	15	.03	28	16	29
5	52	18	18	15	12	2.6	9.9	11	0	30	18	25
6	54	21	18	15	13	2.5	8.2	7.6	0	30	16	24
7	56	26	18	16	13	2.5	3.8	6.0	.06	30	13	24
8	56	30	17	17	13	2.5	2.1	7.6	.11	29	15	32
9	56	29	17	17	12	2.6	6.8	13	1.3	28	15	31
10	55	29	17	16	11	2.6	6.0	4.1	3.3	23	12	29
11	54	28	17	16	11	2.4	4.1	.49	6.0	26	12	28
12	55	27	17	15	10	2.0	4.8	1.6	6.5	28	9.6	35
13	54	26	18	15	9.6	2.0	3.8	1.7	4.6	24	9.6	35
14	54	26	17	16	9.0	1.8	7.6	.53	.82	16	19	37
15	55	26	18	15	8.5	1.6	11	3.6	4.2	9.6	27	36
16	51	25	17	17	8.5	1.4	14	.95	2.8	9.0	29	38
17	49	24	16	14	7.3	1.2	10	1.1	.70	10	25	36
18	47	24	16	14	6.8	1.0	11	2.1	.33	15	13	34
19	34	24	16	14	6.5	.80	6.3	2.1	.37	16	17	33
20	24	24	16	14	5.6	.70	7.6	4.8	3.1	16	29	34
21	22	23	16	14	5.1	.70	6.3	.10	5.1	24	32	34
22	22	23	16	14	4.6	.60	.58	.03	8.7	14	31	31
23	22	23	16	14	4.4	.60	1.1	.31	6.5	10	29	33
24	19	22	16	14	4.3	.50	.53	.76	12	11	23	33
25	20	21	15	14	4.3	.50	.33	.01	18	15	37	32
26	23	21	16	14	4.3	.60	.22	.11	28	17	40	31
27	22	21	16	14	4.1	.90	.95	.08	26	15	37	27
28	18	21	15	14	4.1	1.4	1.4	.27	23	14	31	29
29	15	20	15	14	3.8	2.0	.24	.29	20	11	40	30
30	14	20	15	13	---	2.6	1.2	9.9	23	14	38	22
31	14	---	14	13	---	7.6	---	8.5	---	8.7	32	---
TOTAL	1212	681	520	457	246.8	61.40	162.45	113.19	217.62	596.3	706.2	917
MEAN	39.1	22.7	16.8	14.7	8.51	1.98	5.42	3.65	7.25	19.2	22.8	30.6
MAX	56	30	20	17	13	7.6	14	15	28	30	40	38
MIN	14	13	14	13	3.8	.50	.22	.01	0	8.7	9.6	22
AC-FT	2400	1350	1030	906	490	122	322	225	432	1180	1400	1820

CAL YR 1975 TOTAL 10107.00 MEAN 27.7 MAX 56 MIN 11 AC-FT 20050
WTR YR 1976 TOTAL 5890.96 MEAN 16.1 MAX 56 MIN .00 AC-FT 11680

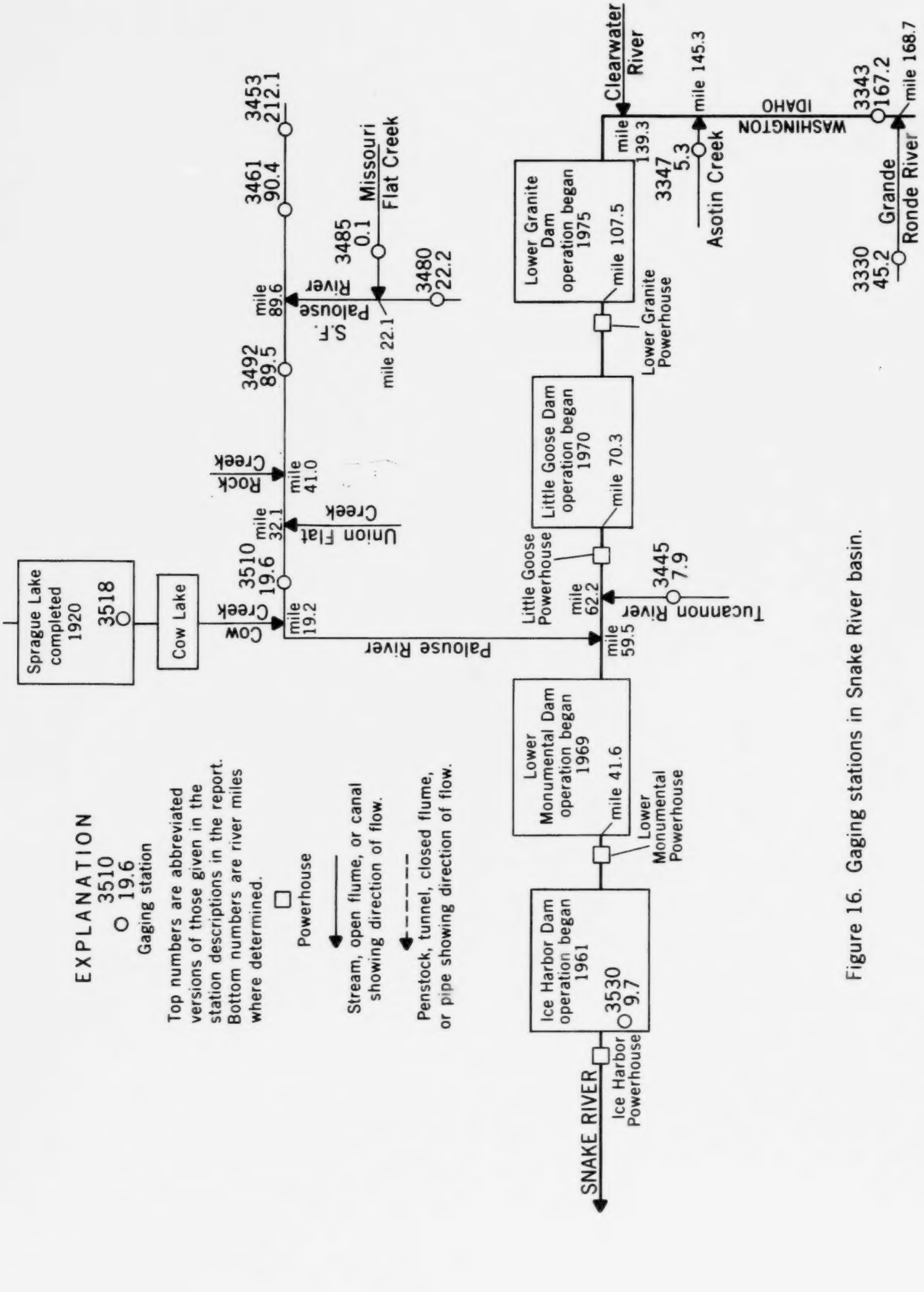
EXPLANATION
3510
19.6
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
SNAKE RIVER
Ice Harbor Powerhouse
Ice Harbor Dam operation began 1961
3530
9.7
Lower Monumental Powerhouse
Lower Monumental Dam operation began 1969
mile 41.6
mile 59.5
Palouse River
Little Goose Powerhouse
mile 62.2
3445
7.9
Tucannon River
Little Goose Dam operation began 1970
mile 70.3
Lower Granite Powerhouse
Lower Granite Dam operation began 1975
mile 107.5
mile 139.3
Clearwater River
3347
5.3
Asotin Creek
mile 145.3
IDAHO
WASHINGTON
3343
167.2
mile 168.7
Grande Ronde River
3330
45.2
Sprague Lake completed 1920
3518
Cow Lake
Cow Creek
mile 19.2
3510
19.6
mile 32.1
Union Flat Creek
mile 41.0
Rock Creek
3492
89.5
mile 89.6
S.F. Palouse River
mile 22.1
3480
22.2
3485
0.1
Missouri Flat Creek
3461
90.4
3453
212.1

Figure 16. Gaging stations in Snake River basin.

13333000 GRANDE RONDE RIVER AT TROY, OR

LOCATION.--45°56'47", long 117°26'54", in NE¼NW¼ sec.4, T.5 N., R.43 E., Wallowa County, Hydrologic Unit 17060106, on left bank 500 ft (152 m) downstream from bridge at Troy, 600 ft (183 m) downstream from Wenaha River, and at mile 45.2 (72.7 km).

DRAINAGE AREA.--3,275 mi² (8,482 km²).

PERIOD OF RECORD.--August 1944 to current year. Monthly discharge only August 1944, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1946(M), 1948-50.

GAGE.--Water-stage recorder. Datum of gage is 1,585.98 ft (483.407 m) above mean sea level. Aug. 17, 1944, to Sept. 30, 1949, nonrecording gage at site 500 ft (152 m) upstream at datum 10.85 ft (3.307 m) lower. Oct. 1, 1949, to Sept. 5, 1963, water-stage recorder at site 500 ft (152 m) upstream at datum 1.15 ft (0.351 m) higher.

REMARKS.--Records excellent. Flow slightly regulated by Wallowa Lake (see sta 13326000) and small reservoirs. Diversions for irrigation above station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Big Sheep and tributaries in Imnaha River basin for irrigation in Wallowa Valley.

AVERAGE DISCHARGE.--32 years, 3,179 ft³/s (90.0 m³/s), 2,303,000 acre-ft/yr (2.84 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft³/s (1,200 m³/s) Dec. 23, 1964, gage height, 11.25 ft (3.429 m); minimum, 405 ft³/s (11.5 m³/s) Aug. 22, 23, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 2	0330	9,570	271	6.28	1.914	Apr. 9	0800	*17,700	501	*8.03	2.448
Dec. 8	0930	9,910	281	6.36	1.939	May 11	0700	15,400	436	7.58	2.310

Minimum discharge, 714 ft³/s (20.2 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	753	1230	3100	2860	2510	3180	6000	9160	5760	4910	1500	920
2	740	1230	9160	2440	2510	2720	5320	10600	5230	4300	1760	891
3	727	1270	7640	2460	2530	2420	5320	10900	4940	3870	1680	835
4	767	1270	6470	2580	2330	2260	6610	10800	4690	3820	1630	793
5	835	1270	5520	2480	1900	2110	8650	10800	4330	3790	1800	793
6	849	1280	4240	2440	1800	2040	11200	10500	4300	3960	1630	793
7	935	1360	5620	2330	1980	2040	11600	10700	4600	4040	1630	835
8	982	1300	10200	2280	2070	2020	12400	11400	5100	3930	1610	821
9	905	1250	8960	2240	2130	2070	16900	12300	5800	3820	1590	821
10	905	1270	7060	2240	2070	2350	16100	13000	6250	3540	1470	821
11	966	1250	5560	2240	1960	3050	15600	14600	6220	3230	1400	835
12	966	1230	4660	2190	2070	2790	15000	13000	5970	3390	1330	821
13	1050	1200	4040	2130	2350	2600	14300	12400	5760	3230	1330	807
14	1050	1210	3410	2150	2480	2670	12600	13500	5160	2760	1360	821
15	982	1300	3130	2790	2670	2580	12400	12300	4790	2480	1430	821
16	982	1430	3050	5100	2960	2550	10800	11400	4970	2300	1480	821
17	966	1380	2880	5560	3760	2910	9530	11400	5760	2190	1430	821
18	951	1300	2620	5730	3520	4360	8800	10600	5970	2150	1430	793
19	966	1180	2350	5360	3130	5560	7800	9860	6180	2070	1410	807
20	951	1110	2170	4630	2790	4940	8920	9410	6720	1900	1360	821
21	1180	1160	2130	4010	2550	4330	9780	8570	7020	1840	1300	863
22	1700	1130	2070	3540	2390	4300	9200	8290	6360	1740	1200	849
23	1400	1200	2070	3390	2350	4720	8650	8120	5660	1650	1180	951
24	1280	1210	2110	3210	2350	4940	8880	7840	5100	1590	1160	944
25	1300	1360	2170	2980	2510	5290	9160	7520	4750	1780	1110	905
26	1500	1480	2460	2760	2830	4690	8490	6990	4240	1590	1110	877
27	1410	1740	4210	2640	3000	4190	7840	7100	3960	1450	1150	863
28	1350	1630	3730	2600	4240	3900	7520	7520	3990	1380	1090	835
29	1300	1430	3390	2620	3710	3680	7600	6760	4420	1280	1060	821
30	1270	1400	3570	2600	---	3680	8160	6320	5160	1230	1010	793
31	1280	---	3390	2530	---	4720	---	6180	---	1200	982	---
TOTAL	33198	39060	133140	95110	75450	105660	301130	309840	159160	82410	42612	25192
MEAN	1071	1302	4295	3068	2602	3408	10040	9995	5305	2658	1375	840
MAX	1700	1740	10200	5730	4240	5560	16900	14600	7020	4910	1800	951
MIN	727	1110	2070	2130	1800	2020	5320	6180	3960	1200	982	793
AC-FT	65850	77480	264100	188700	149700	209600	597300	614600	315700	163500	84520	49970

CAL YR 1975 TOTAL 1370793 MEAN 3756 MAX 15100 MIN 727 AC-FT 2719000
WTR YR 1976 TOTAL 1401962 MEAN 3830 MAX 16900 MIN 727 AC-FT 2781000

13334300 SNAKE RIVER NEAR ANATONE, WA

LOCATION.--Lat 46°05'50", long 116°58'36", in SE¼NE¼ sec.12, T.7 N., R.46 E., Asotin County, Hydrologic Unit 17060103, on left bank 1.2 mi (1.9 km) downstream from Grande Ronde River, 7.8 mi (12.6 km) east of Anatone, 22 mi (35.4 km) south of and at mile 167.2 (269.0 km).

DRAINAGE AREA.--92,960 mi^2 (241,000 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 806.78 ft (245.907 m) above mean sea level.

REMARKS.--Records excellent. Diversions above station for irrigation of about 4,090,000 acres (1,660 hm^2) of which about 750,000 acres (304 hm^2) are by withdrawal from ground water. Flow regulated by many reservoirs above station with a total usable capacity of more than 10,000,000 acre-feet (12,300 hm^3), the most effective of which is Brownlee Reservoir 106.3 mi (171.0 km) upstream (see sta 13289700). Diurnal fluctuations caused by Hells Canyon powerplant.

AVERAGE DISCHARGE.--18 years, 37,270 ft^3/s (1,055 m^3/s) 27,000,000 acre-ft/yr (33,300 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 195,000 ft^3/s (5,520 m^3/s), revised June 18, 1974, gage height, 24.45 ft (7.452 m); minimum, 6,010 ft^3/s (170 m^3/s) Sept. 2, 1958, gage height, 1.29 ft (0.393 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 124,000 ft^3/s (3,510 m^3/s) May 15, gage height, 17.68 ft (5.389 m); minimum, 16,100 ft^3/s (456 m^3/s) Sept. 6, gage height, 4.22 ft (1.286 m).

REVISIONS.--Revised figures of discharge for the water years 1974 and 1975, superseding those published in the reports for 1974 and 1975 are given herein.

EXTREMES FOR 1974 WATER YEAR.--Maximum discharge 195,000 ft^3/s (5,520 m^3/s) June 18, gage height, 24.45 ft (7.452 m); minimum, 15,000 ft^3/s (425 m^3/s) Sept. 30, gage height, 3.99 ft (1.216 m).

EXTREMES FOR 1975 WATER YEAR.--Maximum discharge, 119,000 ft^3/s (3,370 m^3/s) June 8, gage height, 17.19 ft (5.240 m); minimum, 15,000 ft^3/s (425 m^3/s) Dec. 26, gage height, 4.01 ft (1.222 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21400	19300	32400	30600	55800	46700	78400	103000	91800	99300	25500	18000
2	21800	21800	32900	31700	54900	47800	82600	106000	92700	96100	24600	17600
3	19800	22200	35100	29500	46600	48200	84700	100000	99500	90900	23200	21600
4	20300	18800	32500	26500	38400	48300	84300	94400	110000	84800	23200	20800
5	19600	18600	33100	24400	38300	48500	82600	96200	127000	80100	23500	19800
6	19000	19600	31200	24400	37200	50300	83800	99900	133000	75000	25300	17000
7	17700	22100	29800	27300	36200	46100	83800	105000	120000	70000	24100	18800
8	17800	24500	35800	28700	35600	45400	83600	112000	104000	69200	24100	16600
9	18200	26200	37400	27600	35100	50700	83700	121000	93700	71100	23400	16800
10	18200	27200	33800	29100	34800	50200	84300	126000	89400	70400	22600	17000
11	18000	29600	31800	28800	34600	49500	84000	121000	92600	65700	21800	20200
12	19000	41200	30100	25900	34400	47800	84700	112000	103000	63300	21200	19400
13	19800	49800	31800	25100	34300	49700	84500	102000	125000	59200	22000	20400
14	20600	46100	30700	24100	35100	52600	83900	95000	146000	54500	21400	21800
15	20400	43700	29200	38500	39200	55000	84500	89000	162000	52900	21000	20600
16	19400	44800	26900	67800	38800	59800	85700	82400	174000	50900	21600	17400
17	19200	43000	28200	87800	39400	65500	87400	75100	182000	47900	21700	20400
18	19400	40200	35100	79600	39500	71500	89900	71600	191000	45100	21500	20000
19	18600	38100	37200	81800	39900	73400	92600	68100	190000	40900	20400	21500
20	18400	35600	34900	85800	40800	72000	93800	64700	182000	40000	21700	20600
21	17800	33500	35100	76400	47000	68600	93500	59700	172000	37500	22800	21000
22	17400	28200	33100	55800	46600	66400	89400	58400	155000	35800	24100	21000
23	17200	27100	34000	53000	46000	65500	80000	58700	148000	35300	22600	20000
24	17600	28300	34400	56500	45500	64700	83900	59100	146000	33700	22600	19500
25	17600	28500	33400	55800	45200	64700	92300	61600	142000	32300	20000	21200
26	20200	29000	32900	55800	45300	65200	104000	70600	140000	31100	19800	20700
27	18600	29100	34400	54700	45800	66900	109000	85000	132000	29700	19600	23200
28	17000	29000	29800	53500	45800	70400	103000	102000	120000	28600	19600	20400
29	17000	30600	24900	54700	---	73200	101000	107000	113000	27100	20600	16900
30	17100	31800	24300	54200	---	75000	102000	103000	104000	26200	21800	15200
31	17700	---	28900	53900	---	80300	---	96000	---	25600	19000	---
TOTAL	581800	927500	995100	1449300	1156100	1839900	2660900	2805500	3980700	1670200	686300	585400
MEAN	18770	30920	32100	46750	41290	59350	88700	90500	132700	53880	22140	19510
MAX	21800	49800	37400	87800	55800	80300	109000	126000	191000	99300	25500	23200
MIN	17000	18600	24300	24100	34300	45400	78400	58400	89400	25600	19000	15200
AC-FT	1154000	1840000	1974000	2875000	2293000	3649000	5278000	5565000	7896000	3313000	1361000	1161000

CAL YR 1973 TOTAL 9944900 MEAN 27250 MAX 61800 MIN 12000 AC-FT 19730000
WTR YR 1974 TOTAL 19338700 MEAN 52980 MAX 191000 MIN 15200 AC-FT 38360000

13334300 SNAKE RIVER NEAR ANATONE, WA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16400	24400	22200	24000	27900	34900	42600	76000	85100	73900	23700	19800
2	18800	25200	23400	23000	27000	36500	42200	76500	91700	75000	22600	22600
3	23700	20800	20400	25000	24600	41000	42300	78400	102000	79700	21800	24000
4	24100	21600	19600	26800	28200	45200	42400	80400	105000	85300	21200	22600
5	19200	25000	22200	24600	29500	44600	50000	79600	104000	85000	20600	23200
6	18200	25800	23700	27300	29800	43400	51000	69200	107000	86600	20400	23200
7	18400	24300	22800	27400	26800	45200	51000	66900	116000	87000	20400	21500
8	19000	26400	21000	27000	26100	45500	51000	63200	118000	85600	20500	22200
9	21000	26600	24700	27300	25000	47600	51100	65700	112000	83200	20600	23700
10	20800	25000	23200	29200	27400	49600	51400	73100	103000	76600	20200	23500
11	22200	25400	23900	27700	29500	50200	51500	82700	97200	71400	19800	25900
12	24000	24000	23800	28300	28700	50500	52200	86600	97200	67100	19500	23500
13	20500	23400	23600	28600	31600	49400	53800	88800	101000	63000	17800	22800
14	18200	22200	24300	26100	38800	48500	55800	93000	103000	62300	17600	22400
15	24600	20800	25200	28600	38800	48100	56500	102000	103000	59400	17500	21500
16	23800	20400	22800	25900	37900	40900	62400	109000	107000	56600	18200	22800
17	25100	20100	23400	28400	37200	38500	64200	112000	104000	50200	18100	24400
18	22400	17200	26400	29400	36700	38800	63900	111000	96500	47400	18200	24000
19	20800	20600	25600	27000	35400	39900	64100	108000	96300	43800	19400	24200
20	16500	21700	25600	28600	36900	41900	64600	105000	104000	40400	22200	21300
21	23200	20400	26900	29300	39600	43600	68700	98400	104000	38000	23500	16600
22	24500	19200	27400	30100	40000	43700	72900	92300	99900	34600	25100	17000
23	26100	22000	28100	30100	37900	40200	74400	89100	99100	33700	25000	19600
24	26100	23500	26800	27900	36000	39600	78500	87600	104000	30700	27000	19600
25	24700	24000	20300	30400	36000	39500	79900	84400	107000	29300	28800	19600
26	25100	22800	20100	35200	36500	40200	79600	79800	105000	29300	27100	22000
27	26000	22200	25300	34400	36400	47000	79100	77800	101000	27100	26300	22500
28	26300	22800	23200	33400	36800	46100	77700	76300	92400	25900	24100	21000
29	27600	24300	21500	30900	---	47300	76800	73800	83200	25100	23400	20900
30	25000	26700	24900	30000	---	47100	76300	76700	76000	26400	22000	24200
31	25900	---	24800	27400	---	43400	---	82800	---	24900	21000	---
TOTAL	698200	688800	737100	879300	923000	1359900	1827900	2646100	3024600	1704500	673600	662100
MEAN	22520	22960	23780	28360	32960	43870	60930	85360	100800	54980	21730	22070
MAX	27600	26700	28100	35200	40000	50500	79900	112000	118000	87000	28800	25900
MIN	16400	17200	19600	23000	24600	34900	42200	63200	76000	24900	17500	16600
AC-FT	1385000	1366000	1462000	1744000	1831000	2697000	3626000	5249000	5999000	3381000	1336000	1313000

CAL YR 1974 TOTAL 18958400 MEAN 51940 MAX 191000 MIN 15200 AC-FT 37600000
WTR YR 1975 TOTAL 15825100 MEAN 43360 MAX 118000 MIN 16400 AC-FT 31390000

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23000	25500	30000	31900	40000	47500	59100	70800	95800	51100	21000	21600
2	23100	27400	41100	33000	39800	46200	58500	76500	88900	46800	21600	21300
3	23500	26700	40300	30400	39700	43500	57800	82300	85700	42200	22900	20400
4	21500	27400	40500	30500	39300	39800	49400	87000	83800	40100	26400	18100
5	20000	27100	40600	30800	38400	38300	53100	92100	78700	38700	28500	16400
6	20600	27700	41600	30500	37500	35600	58800	93400	88400	38000	30000	16200
7	23400	27100	39300	31000	37300	36500	61700	93100	90700	38700	28600	17000
8	26100	27300	50600	30700	37500	36100	64000	94500	95500	36600	28800	17300
9	24400	29100	50100	30000	38000	37700	74100	99800	96600	35100	28300	17400
10	23000	29500	49300	33300	38500	35600	88600	106000	94500	34200	24300	18800
11	23700	28800	46300	34800	39000	36100	98500	118000	88600	32600	24500	21100
12	23400	28000	43500	33300	39400	37300	97000	119000	86600	30800	22700	21500
13	23400	26400	41600	32100	39700	36800	98500	115000	84900	31600	20400	21500
14	24300	24800	38700	32600	40000	34900	96000	116000	78700	31500	19800	25300
15	25100	23400	35600	32800	40300	37600	94700	122000	74800	28000	19300	27700
16	25000	22100	35200	38100	40300	37900	91300	119000	71800	27100	19600	27100
17	24700	23400	32100	40300	41300	41400	88100	115000	72600	26800	20100	26800
18	22300	29200	33000	39800	41000	43000	85000	110000	78200	26200	21100	28800
19	22500	28000	34100	40300	40300	45600	82600	110000	78300	27100	25100	28400
20	23200	27000	33800	38600	40500	45100	82100	109000	79100	31600	25800	29500
21	25000	26200	32300	39200	40100	44900	83900	105000	82400	29800	27400	30100
22	28200	25500	29500	40000	39600	43700	82900	99900	83100	28300	25300	28300
23	30500	23100	29000	39600	39400	44000	81400	99700	76600	28100	23000	28100
24	28500	22200	29500	38300	39300	44400	83700	100000	67400	26100	21800	26400
25	26100	28700	28400	39200	39500	45800	85800	103000	62300	25100	23400	25500
26	26500	30500	30900	38200	40100	45400	85600	104000	58400	24000	26100	25100
27	28000	30000	32100	38900	40600	56200	85500	102000	56200	24900	25100	24900
28	27100	32400	36300	40300	42300	55800	81800	104000	52800	24100	25200	25000
29	26500	30400	34400	40500	45600	55400	70400	104000	52300	23200	22000	25600
30	25200	31700	33600	40400	---	55000	68700	100000	52200	22200	22700	25100
31	24000	---	31600	40300	---	56000	---	97300	---	20600	20600	---
TOTAL	761800	816600	1144900	1109700	1154300	1339100	2348600	3167400	2335900	971200	741400	706300
MEAN	24570	27220	36930	35800	39800	43200	78290	102200	77860	31330	23920	23540
MAX	30500	32400	50600	40500	45600	56200	98500	122000	96600	51100	30000	30100
MIN	20000	22100	28400	30000	37300	34900	49400	70800	52200	20600	19300	16200
AC-FT	1511000	1620000	2271000	2201000	2290000	2656000	4658000	6283000	4633000	1926000	1471000	1401000

CAL YR 1975 TOTAL 16424300 MEAN 45000 MAX 118000 MIN 16600 AC-FT 32580000
WTR YR 1976 TOTAL 16597200 MEAN 45350 MAX 122000 MIN 16200 AC-FT 32920000

13334300 SNAKE RIVER NEAR ANATONE, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1959 to current year.

INSTRUMENTATION.--Temperature recorder since October 1959.

COOPERATION.--Temperature records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (1959-68, 1970-76), 25°C Aug. 11, 1960, Aug. 13, 1963, July 18, 1973; minimum, 0.0°C Jan. 25, 26, 1962, Dec. 22, 1964, Jan. 15, 1975.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 22.5°C several days during July and August; minimum, 1.0°C Feb. 4-8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	FIELD SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FIELD FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)
OCT												
15...	1030	22100	263	7.8	12.5	14.0	1	10.0	99	9	B5	--
NOV												
12...	1135	28400	141	7.7	11.0	--	1	11.5	108	7	B2	120
DEC												
10...	1015	45700	234	8.0	6.5	7.0	8	11.9	100	4	23	--
JAN												
21...	1130	37900	239	7.3	8.5	--	6	13.8	112	5	B2	--
FEB												
25...	0930	40600	268	7.7	15.0	--	4	13.5	110	1	<1	140
MAR												
24...	1200	44600	224	7.7	11.5	7.0	17	12.6	106	4	B4	--
APR												
07...	1145	64700	--	--	18.5	8.0	--	--	--	--	--	--
13...	1300	107000	--	--	--	8.0	--	--	--	--	--	--
13...	1331	107000	--	--	--	8.0	--	--	--	--	--	--
15...	1130	102000	--	--	--	9.0	--	--	--	--	--	--
19...	1415	87400	--	--	--	9.0	--	--	--	--	--	--
21...	1015	89500	--	--	--	9.0	--	--	--	--	--	--
27...	1000	93900	185	7.9	14.0	--	10	11.5	106	10	B8	--
MAY												
04...	1030	92100	--	--	--	10.5	--	--	--	--	--	--
05...	1100	99300	--	--	--	11.0	--	--	--	--	--	--
13...	1000	124000	--	--	--	12.0	--	--	--	--	--	--
18...	0930	118000	106	7.2	24.0	--	15	11.3	110	10	B14	51
25...	1030	111000	121	--	--	13.0	--	--	--	--	--	--
27...	1000	110000	127	--	--	13.0	--	--	--	--	--	--
JUN												
08...	1255	103000	--	--	--	15.0	--	--	--	--	--	--
10...	1035	101000	138	--	--	--	--	--	--	--	--	--
16...	1000	74600	123	7.3	20.0	13.5	5	12.0	118	<10	B8	--
JUL												
14...	1115	29700	133	8.1	27.0	20.5	1	10.1	114	3	B2	--
AUG												
11...	1000	23100	182	8.2	29.5	22.5	2	9.1	107	37	<1	92
SEP												
15...	1045	26400	236	8.0	22.5	20.0	2	10.4	104	16	B4	--

B Results based upon colony counts outside the ideal range.

13334300 SNAKE RIVER NEAR ANATONE, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	FIELD BICAR-BONATE (HCO3) (MG/L)	FIELD CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT												
15...	--	--	--	--	--	--	--	136	0	112	--	--
NOV												
12...	6	32	10	25	30	1.0	3.4	139	0	114	43	12
DEC												
10...	--	--	--	--	--	--	--	137	0	112	--	--
JAN												
21...	--	--	--	--	--	--	--	137	0	112	--	--
FEB												
25...	8	35	12	22	25	.8	3.5	161	0	132	36	18
MAR												
24...	--	--	--	--	--	--	--	142	0	116	--	--
APR												
07...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	32	0	26	--	--
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
18...	1	14	3.8	6.8	22	.4	1.4	61	0	50	11	3.9
25...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	66	0	54	--	--
JUL												
14...	--	--	--	--	--	--	--	85	0	70	--	--
AUG												
11...	7	24	7.8	18	29	.8	2.7	104	0	85	27	11
SEP												
15...	--	--	--	--	--	--	--	154	0	126	--	--

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	SUS-PENDED SOLIDS (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT												
15...	19	226	.31	13500	40	.44	.03	.22	.25	.69	3.1	.08
NOV												
12...	19	217	.30	16600	0	.53	.00	.31	.31	.84	3.7	.06
DEC												
10...	24	232	.32	28600	8	.68	.04	.34	.38	1.1	4.7	.06
JAN												
21...	24	236	.32	24200	6	.90	.03	.27	.30	1.2	5.3	.05
FEB												
25...	22	220	.30	24100	3	.83	.04	.26	.30	1.1	5.0	.05
MAR												
24...	23	214	.29	25800	44	.76	.02	.40	.42	1.2	5.2	.09
APR												
07...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	158	.21	45600	--	--	--	--	--	--	--	--
15...	--	149	.20	41000	--	--	--	--	--	--	--	--
19...	--	178	.24	42000	--	--	--	--	--	--	--	--
21...	--	173	.24	41800	--	--	--	--	--	--	--	--
27...	19	158	.21	40100	13	.26	.01	.56	.57	.83	3.7	.05
MAY												
04...	--	166	.23	41300	--	--	--	--	--	--	--	--
05...	--	138	.19	37000	--	--	--	--	--	--	--	--
13...	--	114	.16	38200	--	--	--	--	--	--	--	--
18...	14	96	.13	30600	32	.09	.02	.26	.28	.37	1.6	.08
25...	--	83	.11	24900	--	--	--	--	--	--	--	--
27...	--	87	.12	25800	--	--	--	--	--	--	--	--
JUN												
08...	--	104	.14	28900	--	--	--	--	--	--	--	--
10...	--	90	.12	24500	--	--	--	--	--	--	--	--
16...	13	93	.13	18700	11	.08	.02	.21	.23	.31	1.4	.04
JUL												
14...	11	107	.15	8580	0	.07	.00	.40	.40	.47	2.1	.02
AUG												
11...	10	151	.21	9420	0	.13	.00	.03	.03	.16	.71	.01
SEP												
15...	17	214	.29	15300	0	.54	.00	.21	.21	.75	3.3	.06

13334300 SNAKE RIVER NEAR ANATONE, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	OIL AND GREAS (MG/L
OCT												
15...	1030	6	0	80	20	210	0	.1	0	40	2.8	[illegible]
NOV												
12...	1135	4	10	10	20	370	<100	.0	0	10	4.8	[illegible]
DEC												
10...	1015	3	<10	0	20	600	<100	1.4	0	50	7.0	[illegible]
JAN												
21...	1130	3	<10	0	<10	360	<100	.1	--	10	1.7	2
FEB												
25...	0930	4	<10	0	20	120	<100	4.5	1	30	1.7	0
MAR												
24...	1200	38	<10	10	20	1300	<100	.0	0	20	4.1	0
APR												
27...	1000	3	<10	0	10	830	<100	.0	0	10	9.6	1
MAY												
18...	0930	2	<10	10	10	1300	<100	.3	0	10	4.9	0
JUN												
16...	1000	2	5	10	150	390	490	--	--	200	2.8	1
JUL												
14...	1115	3	<10	0	10	80	<100	.2	0	40	3.1	0
AUG												
11...	1000	2	40	0	100	170	100	.0	0	40	4.6	3
SEP												
15...	1045	6	<10	0	10	80	<100	.1	1	6	3.3	2

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM
OCT										
15...	1030	22100	14.0	7	418	--	--	--	--	--
NOV										
12...	1135	28400	--	3	230	--	--	--	--	--
DEC										
10...	1015	45700	7.0	13	1600	--	--	--	--	--
JAN										
21...	1130	37900	--	6	614	--	--	--	--	--
FEB										
25...	0930	40600	---	3	329	--	--	--	--	--
MAR										
24...	1200	44600	7.0	37	4460	64	74	84	91	95
APR										
07...	1145	64700	8.0	152	26600	21	28	39	54	69
13...	1300	107000	8.0	141	40700	17	24	35	47	58
15...	1130	102000	9.0	64	17600	16	22	31	42	52
19...	1415	87400	9.0	30	7080	--	--	--	--	--
21...	1015	89500	9.0	34	8220	--	--	--	--	--
MAY										
04...	1030	92100	10.5	44	10900	22	30	37	45	56
05...	1100	99300	11.0	64	17200	19	25	31	40	51
13...	1000	124000	12.0	200	67000	15	22	31	42	57
25...	1030	111000	13.0	95	28500	14	18	24	32	43
27...	1000	110000	13.0	94	27900	14	17	25	34	44
JUN										
08...	1255	103000	15.0	77	21400	12	14	18	24	32
10...	1035	101000	--	77	21000	13	16	21	27	36
JUL										
14...	1115	29700	20.5	6	481	--	--	--	--	--

13334300 SNAKE RIVER NEAR ANATONE, WA--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
OCT										
15...	--	--	--	--	--	--	--	--	--	--
NOV										
12...	--	--	--	--	--	--	--	--	--	--
DEC										
10...	--	--	--	--	--	83	95	98	100	--
JAN										
21...	--	--	--	--	--	95	100	--	--	--
FEB										
25...	--	--	--	--	--	89	100	--	--	--
MAR										
24...	--	--	--	--	--	97	98	99	100	--
APR										
07...	--	--	--	--	--	80	87	95	99	100
13...	--	--	--	--	--	68	76	89	99	100
15...	--	--	--	--	--	56	66	80	97	99
19...	--	--	--	--	--	58	66	79	98	100
21...	--	--	--	--	--	63	72	84	97	100
MAY										
04...	--	--	--	--	--	61	76	88	99	100
05...	--	--	--	--	--	58	76	87	99	100
13...	68	80	93	99	100	--	--	--	--	--
25...	--	--	--	--	--	54	70	89	99	100
27...	--	--	--	--	--	54	70	88	99	100
JUN										
08...	44	650	89	99	100	--	--	--	--	--
10...	48	69	94	100	--	--	--	--	--	--
JUL										
14...	--	--	--	--	--	89	96	100	--	--

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.0	17.0	10.5	10.0	5.5	5.0	3.0	2.0	2.5	2.5	3.5	3.0
2	18.0	17.0	10.5	10.0	6.0	4.0	2.0	1.5	2.5	2.0	3.5	3.5
3	17.5	17.0	11.0	10.5	6.0	5.5	2.5	2.0	2.5	2.0	3.5	3.0
4	17.5	16.5	11.5	11.0	6.5	6.0	2.5	2.5	2.0	1.0	3.0	2.5
5	17.0	16.5	11.0	10.0	6.0	5.0	2.5	2.5	1.0	1.0	3.0	2.5
6	16.5	16.0	10.5	10.0	5.0	4.5	3.0	2.5	1.5	1.0	3.5	3.0
7	16.0	15.5	10.5	9.5	5.0	5.0	3.0	3.0	1.5	1.0	4.5	3.5
8	15.5	14.5	10.0	9.5	6.0	5.0	3.0	2.5	1.5	1.0	4.5	4.0
9	15.0	14.5	9.5	9.0	6.0	5.5	3.0	3.0	2.0	2.0	5.0	4.5
10	15.0	14.5	9.5	9.0	6.0	5.5	3.5	3.0	2.5	2.0	5.5	4.5
11	15.0	14.0	9.0	8.5	6.0	5.0	3.5	3.0	2.5	2.5	5.0	5.0
12	14.5	14.0	8.5	8.0	5.0	5.0	3.5	3.0	3.5	2.5	5.0	4.5
13	14.0	14.0	8.5	8.0	5.0	4.5	3.0	2.5	3.0	3.0	5.0	4.5
14	14.5	13.5	8.0	7.5	4.5	4.0	2.5	2.5	3.5	3.0	5.5	5.0
15	14.5	14.0	8.0	8.0	4.5	4.0	3.5	2.5	3.5	3.0	5.5	5.0
16	14.5	14.0	8.0	7.0	4.5	4.5	4.0	2.5	3.5	3.5	6.0	5.5
17	14.5	14.0	7.5	7.0	4.5	4.0	4.0	3.5	3.5	3.0	6.0	5.5
18	14.5	14.0	7.5	7.0	4.0	3.5	4.0	3.5	3.5	3.0	6.5	6.0
19	14.0	13.0	7.0	6.0	3.5	3.5	3.5	2.5	3.5	3.0	6.0	5.0
20	13.5	13.5	7.0	6.5	3.5	3.0	2.5	2.0	3.5	3.0	5.5	4.5
21	13.5	12.5	7.0	6.0	3.5	3.0	2.5	2.0	3.5	3.0	5.5	5.0
22	12.5	12.0	6.5	6.0	3.0	3.0	2.0	2.0	3.5	3.0	5.5	5.5
23	12.0	11.0	6.5	6.0	3.5	3.0	2.5	2.5	3.5	3.0	6.0	5.5
24	11.0	10.5	7.0	6.5	4.0	3.5	2.5	2.5	3.5	3.5	6.0	5.5
25	11.0	10.5	7.5	6.5	4.0	4.0	2.5	2.0	3.5	3.5	6.0	5.5
26	10.5	10.0	7.0	6.5	4.5	4.0	2.5	2.0	3.5	3.5	5.5	5.5
27	10.5	10.0	7.0	6.0	4.5	4.0	3.0	2.5	4.0	3.5	6.0	5.5
28	10.5	9.5	6.5	6.0	4.0	4.0	3.0	3.0	4.0	3.5	6.5	5.5
29	10.0	10.0	6.0	5.0	4.5	4.0	3.0	3.0	3.5	3.0	6.5	5.0
30	10.5	10.0	5.5	5.0	4.5	4.0	3.0	2.5	---	---	7.5	6.5
31	10.5	10.0	---	---	4.0	3.0	2.5	2.5	---	---	7.5	7.0
MONTH	18.0	9.5	11.5	5.0	6.5	3.0	4.0	1.5	4.0	1.0	7.5	2.5

13334300 SNAKE RIVER NEAR ANATONE, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	6.5	11.0	10.5	11.5	11.5	17.0	16.0	22.0	21.5	22.0	20.5
2	7.0	6.0	11.0	10.0	12.0	11.0	17.0	15.5	22.5	21.0	21.5	20.5
3	8.0	6.5	10.5	10.0	12.5	12.0	17.0	16.0	21.5	21.0	21.5	20.5
4	8.0	7.0	11.0	10.0	13.0	11.5	17.0	16.5	21.5	20.5	21.5	20.5
5	8.0	7.0	11.0	10.5	13.5	12.5	18.5	16.5	21.5	20.0	21.5	20.5
6	8.0	7.0	11.0	10.0	14.5	13.5	19.0	17.5	21.5	20.5	21.0	20.0
7	7.5	6.5	11.5	11.0	15.0	14.0	19.0	18.0	20.5	20.0	20.0	19.0
8	8.5	7.0	12.0	11.0	14.5	14.0	19.0	18.0	20.5	19.5	19.0	18.5
9	8.5	7.0	11.5	11.5	14.5	14.0	19.5	18.0	20.5	19.5	19.0	18.0
10	8.0	7.0	11.5	11.0	14.0	13.0	19.5	18.0	21.5	19.5	19.5	18.5
11	8.0	8.0	10.5	10.5	14.0	12.5	20.0	18.5	22.0	20.0	19.0	19.0
12	8.0	7.5	11.0	10.0	13.0	12.5	20.0	19.0	21.0	20.5	19.0	18.5
13	7.5	7.5	11.5	10.5	12.0	11.5	19.5	18.0	21.0	20.0	19.5	18.0
14	8.5	7.5	12.0	11.5	12.5	11.5	19.5	18.0	20.5	20.0	18.5	18.0
15	8.5	8.0	11.5	11.0	13.0	12.5	20.0	18.5	20.0	19.5	19.0	18.0
16	8.0	7.5	11.5	10.5	13.5	11.5	21.0	19.5	20.0	19.0	19.0	18.5
17	8.5	7.5	12.0	11.0	14.0	13.0	20.5	20.0	19.5	18.5	19.5	19.0
18	9.0	8.5	11.5	11.0	15.0	13.5	20.0	19.0	20.0	18.5	19.5	19.0
19	9.0	8.0	12.0	11.0	15.5	14.5	20.0	18.5	20.0	19.0	19.5	19.0
20	9.5	8.5	12.0	11.0	16.0	14.5	20.5	19.5	20.0	19.5	19.5	19.0
21	9.0	8.5	12.5	11.5	15.5	14.0	20.5	19.5	20.5	19.0	19.5	19.0
22	9.0	8.5	12.5	12.0	14.5	13.5	21.0	19.0	20.5	20.0	19.5	19.0
23	10.0	8.5	12.5	12.0	14.0	13.5	21.0	20.0	21.0	20.0	19.5	19.0
24	10.0	9.5	12.0	11.5	14.5	13.5	21.0	20.0	21.5	20.5	19.0	18.5
25	9.5	9.0	12.5	11.5	14.0	13.5	22.0	20.5	21.0	20.0	19.0	18.5
26	9.0	8.5	12.5	11.5	14.0	13.0	22.5	21.0	20.0	19.5	19.0	18.5
27	8.5	8.5	13.0	12.5	15.0	13.5	21.5	20.5	20.0	19.0	19.0	18.5
28	10.0	8.5	12.5	11.5	16.0	15.0	21.5	20.0	20.5	19.5	19.0	18.5
29	10.5	9.0	12.0	11.5	16.5	16.0	21.5	20.0	21.0	20.0	19.0	18.5
30	11.0	10.0	12.0	11.5	17.0	16.0	22.5	20.5	21.0	20.0	19.0	18.0
31	---	---	12.0	11.5	---	---	22.5	21.5	21.5	20.5	---	---
MONTH	11.0	6.0	13.0	10.0	17.0	11.0	22.5	15.5	22.5	18.5	22.0	18.0
YEAR	22.5	1.0										

13334700 ASOTIN CREEK BELOW KEARNEY GULCH, NEAR ASOTIN, WA

LOCATION--Lat 46°19'35", long 117°09'06", in SW¼SE¼ sec.22, T.10 N., R.45 E., Asotin County, Hydrologic Unit 17060103, on left bank 0.3 mi (0.5 km) downstream from Kearney Gulch, 2.5 mi (4.0 km) upstream from George Creek, 5.0 mi (8.0 km) west of Asotin, and at mile 5.3 (8.5 km).

DRAINAGE AREA.--170 mi^2 (440 km^2).

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,090 ft (332 m), from topographic map.

REMARKS.--Records good. No regulation. Several diversions for irrigation. Prior to Nov. 20, 1959, at a point 3.3 mi (5.3 km) upstream, the city of Clarkston diverted about 30 ft^3/s (0.85 m^3/s) for municipal use and irrigation. Natural low flows nearly equivalent to those of former station 3.3 mi (5.3 km) upstream.

AVERAGE DISCHARGE.--17 years, 79.3 ft^3/s (2.246 m^3/s), 57,450 acre-ft/yr (70.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge about 3,700 ft^3/s (105 m^3/s) Jan. 15, 1974; maximum gage height, 8.07 ft (2.460 m) Jan. 14, 1974; minimum discharge, 13 ft^3/s (0.37 m^3/s) Jan. 11, 1963, result of freezeup; minimum gage height recorded, 0.77 ft^3/s (0.235 m^3/s) Oct. 1, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 220 ft^3/s (6.23 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 8	0915	231	6.54	1.86	0.567	May 11	0215	456	12.9	2.54	0.774
Jan. 17	0715	282	7.99	2.08	0.634	June 7	2130	845	23.9	3.30	1.006
Apr. 9	0630	316	8.95	2.19	0.668	Aug. 3	1545	*1,360	38.5	*4.37	1.332

Minimum discharge, 35 ft^3/s (0.99 m^3/s) Aug. 12, 13, gage height, 0.87 (0.265 m); minimum gage height, 0.87 ft (0.265 m) Aug. 12, 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	44	71	84	77	77	113	135	157	79	39	39
2	37	44	137	82	75	72	111	178	149	77	38	38
3	38	46	134	81	75	69	109	186	144	77	144	38
4	42	48	129	79	64	67	116	189	133	77	95	39
5	41	47	133	79	64	64	137	200	128	75	49	39
6	42	47	115	75	84	66	183	202	126	75	44	39
7	44	50	149	70	79	64	197	219	159	74	45	39
8	42	46	224	74	82	64	225	259	113	74	43	39
9	41	46	203	69	72	64	303	313	105	70	42	38
10	42	48	170	67	67	77	279	353	107	64	39	38
11	42	46	143	72	67	77	264	403	103	60	37	39
12	42	45	126	66	70	74	288	323	95	55	37	39
13	44	45	114	63	70	74	282	306	91	55	37	39
14	41	45	100	86	69	70	239	349	91	54	39	39
15	41	51	95	113	64	69	225	300	88	52	44	40
16	40	52	87	189	75	69	191	273	88	51	52	39
17	40	49	81	279	72	79	167	270	91	48	52	39
18	40	47	77	264	70	128	149	236	88	47	52	42
19	40	45	74	216	67	128	133	211	88	47	50	39
20	40	45	71	180	66	120	137	208	88	47	47	39
21	52	45	70	152	64	109	137	194	86	45	45	38
22	50	45	68	135	63	109	135	189	91	45	45	39
23	45	46	66	126	63	111	126	194	91	45	44	39
24	43	47	66	113	64	118	124	191	90	44	43	43
25	45	49	66	105	67	120	126	186	86	44	44	39
26	52	53	103	97	74	111	122	172	86	43	43	39
27	46	55	107	91	84	107	116	175	82	43	42	39
28	45	51	104	88	82	99	107	186	82	42	40	38
29	44	47	100	84	75	93	105	167	81	42	40	38
30	44	47	101	81	---	88	111	167	79	40	40	39
31	45	---	95	79	---	95	---	170	---	40	39	---
TOTAL	1328	1421	3379	3439	2065	2732	5057	7104	3086	1731	1490	1171
MEAN	42.8	47.4	109	111	71.2	88.1	169	229	103	55.8	48.1	39.0
MAX	52	55	224	279	84	128	303	403	159	79	144	43
MIN	37	44	66	63	63	64	105	135	79	40	37	38
AC-FT	2630	2820	6700	6820	4100	5420	10030	14090	6120	3430	2960	2320

CAL YR 1975 TOTAL 34388 MEAN 94.2 MAX 400 MIN 35 AC-FT 68210
WTR YR 1976 TOTAL 34003 MEAN 92.9 MAX 403 MIN 37 AC-FT 67440

13343600 SNAKE RIVER BELOW LOWER GRANITE DAM, WA
(National Water Quality Surveillance System)

LOCATION.--Lat 46°40'04", long 117°26'38", in NE¼SE¼ sec.30, T.14 N., R.43 E., Garfield County, Hydrologic Unit 17060107, 1.0 mi (1.6 km) below Lower Granite Dam, 16 mi (25.7 km) northeast of Pomeroy, and at mile 106.5 (171.4 km).

DRAINAGE AREA.--103,500 mi² (268,100 km²), approximately.

PERIOD OF RECORD.--July 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	CLOUD COVER (PERCENT)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
OCT 23...	1230	58500	204	7.1	75	12.8	1	9.1	9	2	17	185
NOV 26...	1400	46700	278	8.1	100	6.0	1	11.8	2	--	19	176
DEC 29...	1230	59300	315	7.2	100	4.0	20	11.2	12	30	19	176
JAN 27...	1130	128000	298	7.2	95	3.2	4	13.0	--	32	21	176
FEB 26...	1030	107000	248	7.4	100	3.6	3	13.3	0	40	19	176
MAR 17...	1030	128000	225	7.5	100	4.7	8	12.6	4	12	20	151
APR 21...	1200	115000	145	7.6	40	8.4	9	12.4	7	32	20	142
MAY 13...	1120	172000	65	7.1	0	9.6	12	12.4	9	110	13	74
JUN 10...	1150	82100	120	7.8	100	13.3	--	11.9	22	3	11	70
JUL 07...	1150	62600	79	7.3	100	16.1	0	10.0	<10	<1	10	58
AUG 06...	1015	39100	183	8.0	25	21.8	1	7.6	6	2	10	112
SEP 08...	1400	36200	264	8.0	0	20.4	1	8.2	5	1	13	153

DATE	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL NITROGEN (NO3) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 23...	.25	29200	8	.44	.04	.20	.24	.68	3.0	.05	.04	2.1
NOV 26...	.24	22200	3	.54	.04	.24	.28	.82	3.6	.05	.04	2.4
DEC 29...	.24	28200	--	.55	.32	.10	.42	.97	4.3	.09	.03	3.3
JAN 27...	.24	60800	0	.72	.08	.22	.30	1.0	4.5	.05	.04	8.2
FEB 26...	.24	50800	0	.64	.06	.32	.38	1.0	4.5	.05	.03	2.3
MAR 17...	.21	52200	12	.58	.12	.26	.38	.96	4.2	.06	.04	2.4
APR 21...	.19	44100	5	.37	.12	.17	.29	.66	2.9	.07	.04	9.6
MAY 13...	.10	34400	23	.12	.07	.17	.24	.36	1.6	.07	.02	5.1
JUN 10...	.10	15500	9	.07	.06	--	--	--	--	--	.01	2.9
JUL 07...	.08	9800	1	.02	.04	.16	.20	.22	1.0	.01	.00	1.6
AUG 06...	.15	11800	0	.03	.06	.18	.24	.27	1.2	.02	.01	6.4
SEP 08...	.21	15000	0	.18	.05	.25	.30	.48	2.1	.04	.02	7.7

13343600 SNAKE RIVER BELOW LOWER GRANITE DAM, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	TOTAL CALCIUM (CA) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM
DEC 29...	1230	93	0	23	24	8.2	8.0	18	17	28
MAR 17...	1030	91	0	24	23	16	8.1	16	16	27
JUN 10...	1150	43	3	12	12	3.1	3.1	6.2	6.7	25
SEP 08...	1400	84	0	16	22	7.2	7.1	18	19	32

DATE	SODIUM ADSORPTION RATIO	TOTAL POTASSIUM (K) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
DEC 29...	.6	2.9	2.8	116	0	95	12	27	11	166
MAR 17...	.7	3.0	2.7	113	0	93	5.7	23	9.0	158
JUN 10...	.4	1.2	1.2	49	0	40	1.2	10	2.6	71
SEP 08...	.9	2.3	2.5	110	0	90	1.8	26	9.3	153

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC 29...	3	<10	40	10	2000	<100	.0	0	110
MAR 17...	2	<10	10	20	650	<100	.0	0	10
JUN 10...	0	0	10	10	360	3	<.5	0	10
SEP 08...	2	<10	0	10	170	<100	.0	1	10

13344500 TUCANNON RIVER NEAR STARBUCK, WA

LOCATION.--Lat 46°30'17", long 118°03'55", in NE¼SW¼ sec.21, T.12 N., R.38 E., Columbia County, Hydrologic Unit 17060107, on right bank 180 ft (55 m) downstream from county road bridge, 0.5 mi (0.8 km) downstream from Smith Hollow, 3.0 mi (4.8 km) east of Starbuck, 3.3 mi (5.3 km) downstream from Pataha Creek, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--431 mi^2 (1,116 km^2).

PERIOD OF RECORD.--October 1914 to September 1917, August 1928 to September 1931, October 1958 to current year. Monthly discharge only for October and November 1914, published in WSP 1317. Water temperatures October 1962 to June 1970, sediment records October 1962 to June 1970.

REVISED RECORDS.--WSP 1347: 1930.

GAGE.--Water-stage recorder. Altitude of gage is 730 ft (223 m), from topographic map. Nov. 8, 1914, to Sept. 30, 1917, nonrecording gage at site 2.8 mi (4.5 km) upstream at different datum. Aug. 9, 1928, to Sept. 30, 1931, nonrecording gages at site 2.5 mi (4.0 km) upstream at various datums.

REMARKS.--Records fair. Many small diversions for irrigation above the station.

AVERAGE DISCHARGE.--24 years (water years, 1915-17, 1929-31, 1959-76), 181 ft^3/s (5.126 m^3/s), 131,100 acre-ft/yr (162 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,980 ft^3/s (226 m^3/s) Dec. 22, 1964, gage height, 9.84 ft (2.999 m), from rating curve extended above 2,500 ft^3/s (70.8 m^3/s) on basis of slope-area measurement of peak flow; minimum, 15 ft^3/s (0.42 m^3/s) July 11, 12, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft^3/s (19.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 8	0245	*1,070	30.3	*3.02	0.920	Jan. 16	1000	835	23.6	2.60	0.792

Minimum discharge, 85 ft^3/s (2.41 m^3/s) Oct. 1-3; minimum gage height, 0.66 ft (0.201 m), Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	117	275	213	245	329	307	348	317	164	96	92
2	85	117	516	248	241	303	307	422	292	158	108	90
3	85	117	481	251	235	278	314	472	271	153	130	90
4	90	119	508	376	219	251	314	451	254	151	114	90
5	92	121	494	422	169	238	360	443	238	148	110	88
6	94	121	405	296	169	241	422	447	222	135	121	92
7	100	128	538	282	189	238	443	464	222	133	110	92
8	100	124	950	356	219	232	447	485	303	143	119	92
9	102	124	745	329	213	225	585	555	329	135	110	92
10	102	124	610	307	189	235	615	620	310	128	102	90
11	102	126	477	418	189	275	585	655	299	128	96	88
12	102	124	405	352	216	241	580	540	285	128	94	88
13	112	121	360	317	216	245	526	498	285	126	100	90
14	106	121	310	314	225	241	464	540	261	124	126	88
15	102	133	285	526	213	232	468	508	248	119	133	92
16	102	140	265	740	348	229	422	447	251	114	124	94
17	102	135	241	775	321	232	389	443	285	110	112	92
18	100	130	225	755	310	310	364	422	254	108	112	88
19	96	128	207	670	303	356	337	397	245	108	108	88
20	100	128	198	570	282	348	356	389	245	106	106	87
21	121	130	201	472	265	340	372	360	261	106	104	87
22	135	126	192	405	258	340	380	348	251	102	102	87
23	119	130	186	372	251	356	360	360	232	100	104	87
24	117	133	216	333	241	385	348	352	216	98	100	87
25	117	145	207	307	245	376	348	337	207	98	110	87
26	135	169	225	289	265	344	337	321	198	94	112	88
27	121	198	289	275	285	333	329	325	186	92	104	87
28	119	183	282	261	414	329	314	344	181	92	102	87
29	117	169	282	251	337	307	310	317	169	94	98	88
30	117	183	372	245	---	289	310	314	161	94	96	87
31	119	---	292	245	---	299	---	325	---	92	94	---
TOTAL	3296	4064	11239	11972	7272	8977	12013	13249	7478	3681	3357	2675
MEAN	106	135	363	386	251	290	400	427	249	119	108	89.2
MAX	135	198	950	775	414	385	615	655	329	164	133	94
MIN	85	117	186	213	169	225	307	314	161	92	94	87
AC-FT	6540	8060	22290	23750	14420	17810	23830	26280	14830	7300	6660	5310

CAL YR 1975 TOTAL 86618 MEAN 237 MAX 1100 MIN 78 AC-FT 171800
WTR YR 1976 TOTAL 89273 MEAN 244 MAX 950 MIN 85 AC-FT 177100

PALOUSE RIVER BASIN

13345300 PALOUSE RIVER AT PALOUSE, WA

LOCATION.--Lat 46°54'36", long 117°04'12", in SW¼NW¼ sec.6, T.16 N., R.46 E., Whitman County, Hydrologic Unit 17060108, on right bank at State Highway 6, 0.3 mi (0.5 km) east of the intersection of State Highways 6, 27, and 272 in Palouse and at mile 212.1 (194.8 km).

DRAINAGE AREA.--360 mi^2 (932 km^2), approximately.

PERIOD OF RECORD.--May 1973 to current year. Chemical analyses October 1974 to September 1975, sediment records September 1961 to August 1964 (published as 13345400).

GAGE.--Water-stage recorder. Datum of gage is 2,412.62 ft (735.367 m) above mean sea level (Corps of Engineers reference mark).

REMARKS.--Records fair. Small diversions for irrigation upstream from station. Low flows regulated by millpond at Potlatch, Idaho.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft^3/s (320 m^3/s) Jan. 16, 1974, gage height, 16.08 ft (4.901 m); no flow Aug. 26 to Sept. 9, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,680 ft^3/s (75.9 m^3/s) Jan. 16, gage height, 7.66 ft (2.335 m); minimum daily, 5.3 ft^3/s (0.15 m^3/s) Sept. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	88	72	420	352	610	1160	817	194	41	16	9.6
2	8.7	76	285	370	320	465	872	954	180	41	18	7.6
3	9.5	55	424	336	270	371	829	971	162	41	17	6.6
4	10	52	493	285	230	339	946	864	154	39	29	5.7
5	14	45	692	276	200	300	1180	801	137	37	28	5.7
6	21	40	370	271	240	285	1560	748	131	36	23	5.3
7	22	47	403	240	313	290	1590	678	123	34	21	5.3
8	26	54	678	233	281	308	1730	678	117	32	26	9.0
9	28	61	790	250	259	341	2130	714	112	33	26	12
10	25	52	499	247	243	465	2170	696	107	35	22	8.0
11	21	45	373	298	219	699	1830	809	101	32	21	7.1
12	21	39	305	331	245	417	1840	667	94	30	18	6.1
13	26	35	250	271	487	405	2250	519	93	30	17	6.1
14	26	31	210	298	649	397	1850	459	94	30	16	6.6
15	22	34	180	1060	628	382	1990	417	84	23	18	6.6
16	20	38	150	2600	642	380	1620	366	84	26	23	6.6
17	19	65	130	2250	774	494	1200	326	49	26	31	7.6
18	20	45	110	1850	685	1060	1200	300	109	24	36	8.0
19	19	32	105	1290	559	1580	1150	271	83	23	26	11
20	18	29	100	930	478	942	1280	313	75	23	22	12
21	21	28	90	707	402	809	1580	313	67	23	20	12
22	32	26	78	573	388	860	1260	257	70	23	20	12
23	42	32	85	523	414	963	1110	233	71	22	18	12
24	40	63	125	438	441	1060	976	224	63	20	16	11
25	36	70	180	377	685	1240	997	209	56	19	14	24
26	41	93	800	328	782	893	925	194	56	20	14	22
27	56	104	1600	339	833	733	817	178	54	20	20	17
28	47	98	700	371	1340	707	748	180	49	18	24	15
29	45	70	550	394	805	663	740	174	47	16	17	14
30	43	43	800	385	---	604	755	158	45	14	14	12
31	72	---	550	374	---	809	---	190	---	12	11	---
TOTAL	859.6	1590	12177	18915	14163	19871	40285	14678	2911	843	642	303.5
MEAN	27.7	53.0	393	610	488	641	1343	473	97.0	27.2	20.7	10.1
MAX	72	104	1600	2600	1340	1580	2250	971	194	41	36	24
MIN	8.4	26	72	233	200	285	740	158	45	12	11	5.3
AC-FT	1710	3150	24150	37520	28090	39410	79910	29110	5770	1670	1270	602

CAL YR 1975 TOTAL 116809.3 MEAN 320 MAX 3220 MIN 8.0 AC-FT 231700
WTR YR 1976 TOTAL 127238.1 MEAN 348 MAX 2600 MIN 5.3 AC-FT 252400

13346100 PALOUSE RIVER AT COLFAX, WA

LOCATION.--Lat 46°53'50", long 117°21'20", in NW¼NE¼ sec.11, T.16 N., R.43 E., Whitman County, Hydrologic Unit 17060108, on left bank 1,000 ft (305 m) upstream from Sixth Street crossing in Colfax, and 0.8 mi (1.3 km) upstream from South Fork.

DRAINAGE AREA.--497 mi² (1,287 km²).

PERIOD OF RECORD.--September 1955 to June 1973, Oct. 1, 1975 to Sept. 30, 1976. Published as Palouse River "near Colfax" 1955-63, where drainage area was 491 mi² (1,272 km²). Records published for both sites October 1963 to September 1964.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,956.94 ft (596.475 m) above mean sea level (levels by Corps of Engineers). Sept. 19, 1955, to Sept. 30, 1963, at site 3.1 mi (5.0 km) upstream at different datum.

REMARKS.--Records good. Many small diversions for irrigation above station. Slight regulation my millponds above station.

AVERAGE DISCHARGE.--18 years (water years 1956-72, 1976) 321 ft³/s (9.091 m³/s) 232,600 acre-ft/yr (287 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,510 ft³/s (241 m³/s) Dec. 24, 1964, gage height, 11.14 ft (3.395 m); minimum, 0.10 ft³/s (0.003 m³/s) Aug. 25-28, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 27	0030	3,330	94.3	7.36	2.243	Mar. 24	1800	2,040	57.8	6.17	1.881
Jan. 16	1730	*3,750	106	*7.70	2.347	Apr. 13	0830	2,360	66.8	6.46	1.969
Feb. 26	2315	2,640	74.8	6.75	2.057						

Minimum discharge, 13 ft³/s (0.37 m³/s) Sept. 8, 20; minimum gage height, 2.58 ft (0.786 m) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	63	92	442	426	602	1130	821	215	50	16	23
2	17	92	488	288	426	470	1070	940	194	46	16	22
3	17	70	654	330	448	360	898	1010	177	46	19	18
4	18	61	681	340	185	360	940	919	162	46	19	17
5	18	58	988	315	175	315	1160	849	151	41	24	15
6	19	56	576	310	270	335	1510	793	136	41	33	14
7	22	58	556	340	300	382	1660	716	129	39	32	14
8	28	56	919	292	320	415	1710	681	123	39	28	13
9	30	63	1020	310	280	459	1990	716	116	39	28	14
10	33	66	716	301	260	556	2190	730	116	37	28	18
11	33	61	524	366	270	884	1900	800	106	37	25	19
12	30	58	420	482	350	562	1830	758	103	37	19	18
13	28	56	335	350	654	476	2280	569	100	35	20	16
14	33	50	296	350	744	476	2050	476	94	33	21	15
15	33	52	260	1490	716	448	1940	442	94	33	22	15
16	32	54	235	3150	996	426	1830	388	89	32	27	15
17	28	68	210	2850	863	482	1360	335	89	27	24	14
18	28	86	170	2330	751	550	1250	310	106	27	27	14
19	27	58	150	1610	640	905	1300	283	103	27	33	14
20	27	46	140	1160	518	1170	1320	274	86	25	40	13
21	26	54	130	891	470	1020	1740	335	80	24	34	14
22	28	50	125	702	569	1100	1450	274	75	22	29	15
23	32	61	120	654	614	1160	1280	240	75	22	25	15
24	41	68	210	530	800	1300	1100	227	74	22	20	15
25	43	97	320	442	919	1540	1080	219	68	21	19	14
26	43	116	793	393	1080	1120	1030	198	63	19	21	14
27	48	140	1950	488	1700	933	912	181	61	19	24	25
28	66	123	980	536	1080	884	821	173	58	19	22	25
29	66	70	667	494	814	877	786	170	54	19	25	22
30	56	48	988	464	---	751	793	166	52	18	27	18
31	56	---	742	448	---	800	---	177	---	17	25	---
TOTAL	1024	2059	16455	23448	17638	22118	42310	15170	3149	959	772	498
MEAN	33.0	68.6	531	756	608	713	1410	489	105	30.9	24.9	16.6
MAX	66	140	1950	3150	1700	1540	2280	1010	215	50	40	25
MIN	17	46	92	288	175	315	786	166	52	17	16	13
AC-FT	2030	4080	32640	46510	34980	43870	83920	30090	6250	1900	1530	988

WTR YR 1976 TOTAL 145600 MEAN 398 MAX 3150 MIN 13 AC-FT 288800

13348000 SOUTH FORK PALOUSE RIVER AT PULLMAN, WA

LOCATION.--Lat 46°43'57", long 117°10'48", in NE¼NE¼ sec.6, T.14 N., R.45 E., Whitman County, Hydrologic Unit 17060108, on right bank at State Street crossing in Pullman, 600 ft (183 m) upstream from Missouri Flat Creek, and at mile 22.2 (35.7 km).

DRAINAGE AREA.--132 mi^2 (342 km^2).

PERIOD OF RECORD.--February 1934 to September 1942, December 1959 to current year. Chemical analyses October 1973 to September 1974.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,326.3 ft (709.06 m) above mean sea level. Prior to Mar. 19, 1934, nonrecording gage at site 30 ft (9 m) upstream.

REMARKS.--Records excellent. Minor diversions for domestic use above station. Slight regulation caused by pondage at Robinson Park Dam on headwaters and by Moscow sewage disposal plant on Paradise Creek.

AVERAGE DISCHARGE.--24 years (water years 1935-42, 1961-76) 40.5 ft^3/s (1.147 m^3/s), 4.17 in/yr (106 mm/yr), 29,340 acre-ft/yr (36.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,570 ft^3/s (129 m^3/s) Jan. 21, 1972, gage height, 9.46 ft (2.883 m); minimum, 0.1 ft^3/s (0.003 m^3/s) Sept. 23, 1942, gage height, 0.50 ft (0.152 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1910, 9.5 ft (2.90 m) Feb. 26, 1948, discharge, 5,000 ft^3/s (142 m^3/s). Flood of Jan. 24, 1959, reached a stage of 6.5 ft (1.98 m) from floodmarks, discharge, 1,860 ft^3/s (52.7 m/s). Flood of Dec. 22, 1933, reached a stage of 6.0 ft (1.83 m) from gage readings furnished by Washington State University, discharge, 1,800 ft^3/s (51.0 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,000 ft^3/s (revised) (28.3 m^3/s) and maximum discharge, 1,390 ft^3/s (39.4 m^3/s) Jan. 15, gage height, 4.92 ft (1.500 m); minimum discharge, 3.7 ft^3/s (0.10 m^3/s) Oct. 2, Sept. 2, 3; minimum gage height, 0.75 ft (0.229 m) Sept. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	8.5	164	42	91	149	226	58	24	11	5.5	5.7
2	5.2	9.1	175	39	86	124	170	58	27	9.7	6.1	5.3
3	6.5	8.5	75	37	79	100	145	60	28	9.2	11	5.3
4	6.1	8.5	100	36	42	82	135	56	28	8.2	16	5.0
5	6.5	8.0	79	55	35	75	134	52	24	8.0	8.2	4.7
6	12	10	41	56	38	84	137	50	22	8.2	7.1	4.7
7	8.4	17	175	49	37	116	132	48	22	8.4	10	5.0
8	6.5	11	216	67	39	135	123	45	28	10	9.4	5.9
9	7.5	9.9	107	85	41	170	132	42	25	8.7	7.1	5.7
10	8.4	11	71	67	39	248	117	52	23	6.9	6.7	5.5
11	6.9	11	53	116	39	240	106	76	21	6.7	6.5	5.3
12	11	10	45	110	93	125	165	46	20	7.7	5.9	5.2
13	11	10	32	76	97	127	291	43	21	7.7	6.7	5.2
14	7.3	11	30	126	129	130	149	37	19	7.3	10	5.5
15	7.1	14	33	951	84	115	255	35	18	6.9	7.3	5.3
16	6.7	12	32	753	326	122	142	33	22	6.7	8.4	5.3
17	6.9	11	27	540	238	171	117	29	25	6.5	7.7	6.7
18	6.3	9.6	24	423	199	567	164	29	19	6.3	7.3	5.7
19	6.1	8.9	23	228	163	312	116	29	16	6.3	6.7	5.5
20	6.8	8.8	22	150	139	200	191	50	15	6.5	6.7	5.0
21	16	8.5	21	120	109	224	142	33	18	6.1	6.5	5.3
22	14	8.1	21	98	131	223	123	29	19	6.1	6.1	5.5
23	11	20	20	104	156	203	110	28	16	6.3	5.9	5.5
24	9.7	35	31	88	148	395	98	31	14	6.3	5.7	5.5
25	14	27	49	71	203	241	101	26	13	5.9	6.7	5.5
26	21	46	389	65	200	190	84	24	12	5.7	7.1	5.5
27	15	41	222	91	348	161	80	25	11	5.7	6.7	5.2
28	13	23	85	129	329	207	70	33	10	9.2	6.5	5.5
29	10	15	82	135	209	214	65	26	9.7	5.7	6.1	5.2
30	10	10	131	118	---	182	60	24	9.4	6.1	5.9	5.3
31	10	---	56	97	---	165	---	24	---	5.7	6.1	---
TOTAL	292.2	441.4	2631	5122	3867	5797	4080	1231	579.1	225.7	229.6	161.5
MEAN	9.43	14.7	84.9	165	133	187	136	39.7	19.3	7.28	7.41	5.38
MAX	21	46	389	951	348	567	291	76	28	11	16	6.7
MIN	5.2	8.0	20	36	35	75	60	24	9.4	5.7	5.5	4.7
CFSM	.07	.11	.64	1.25	1.01	1.42	1.03	.30	.15	.06	.06	.04
IN.	.08	.12	.74	1.44	1.09	1.63	1.15	.35	.16	.06	.06	.05
AC-FT	580	876	5220	10160	7670	11500	8090	2440	1150	448	455	320

CAL YR 1975 TOTAL 22313.6 MEAN 61.1 MAX 921 MIN 4.0 CFSM .46 IN 6.29 AC-FT 44260
WTR YR 1976 TOTAL 24657.5 MEAN 67.4 MAX 951 MIN 4.7 CFSM .51 IN 6.95 AC-FT 48910

13348500 MISSOURI FLAT CREEK AT PULLMAN, WA

LOCATION.--Lat 46°43'59", long 117°10'47", on line between secs.5 and 6, T.14 N., R.45 E., Whitman County, Hydrologic Unit 17060108, on left bank at State Street crossing in Pullman, 600 ft (183 m) upstream from mouth.

DRAINAGE AREA.--27.1 mi² (70.2 km²).

PERIOD OF RECORD.--February 1934 to September 1940, January 1960 to current year.

REVISED RECORDS.--WSP 1317: Drainage area.

GAGE.--Water-stage recorder and concrete control with a 90° V-notch weir inside a 2-ft (0.61 m) Parshall flume. Datum of gage is 2,328.4 ft (709.70 m) above mean sea level. Prior to Mar. 15, 1934, nonrecording gage at site 20 ft (6.1 m) upstream at same datum.

REMARKS.--Records good. No regulation or diversion. Waste water from swimming pools at Washington State University is discharge into stream above station.

AVERAGE DISCHARGE.--22 years (water years 1935-40, 1961-76), 8.70 ft³/s (0.246 m³/s), 6,300 acre-ft/yr (7.77 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,220 ft³/s (34.6 m³/s) Jan. 21, 1972, gage height, 6.65 ft (2.027 m); no flow for part of Nov. 21, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 26, 1948, reached a stage of 6.3 ft (1.92 m), discharge, 1,500 ft³/s (42.5 m³/s) by slope-area measurement, 0.9 mi (1.4 km) upstream. Flood of Jan. 24, 1959, reached a stage of 4.57 ft (1.393 m), from floodmarks, discharge, 870 ft³/s (24.6 m³/s) by slope-area measurement, 0.25 mi (0.40 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft (7.08 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	1900	282	7.99	2.76	0.841	Feb. 27	1845	*396	11.2	*3.20	0.975
Jan. 15	1700	378	10.7	3.12	0.951	Mar. 18	1200	330	9.35	2.90	0.884

Minimum discharge, 0.25 ft³/s (0.007 m³/s) Sept. 8, 9, gage height, 0.40 ft (0.122 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.95	38	5.5	17	25	39	6.0	3.3	1.1	.47	.31
2	.38	1.1	48	4.4	18	22	23	5.8	2.8	.65	.55	.35
3	.51	.92	14	3.7	15	6.5	19	6.5	2.4	.61	.79	.32
4	.85	.85	38	4.1	4.8	2.2	16	5.2	2.5	.58	.42	.30
5	.70	.79	12	7.6	1.9	1.7	14	4.1	2.0	.56	.39	.29
6	2.7	2.3	5.5	6.3	1.3	1.1	13	3.9	1.7	.55	.51	.38
7	1.4	1.7	56	5.9	.77	14	12	3.7	1.7	.61	1.4	.44
8	.56	1.1	38	12	.60	44	2.7	3.4	3.0	1.2	.71	.30
9	.56	1.1	14	12	.58	56	8.9	3.1	2.4	.64	.44	.31
10	2.0	1.3	10	11	.54	88	3.1	5.5	2.2	.56	.39	.32
11	.61	1.4	6.0	27	.55	46	1.9	7.2	1.6	.51	.36	.33
12	.85	.95	4.7	22	13	23	23	3.3	2.1	.50	.36	.33
13	.61	.95	3.1	17	13	26	63	3.0	1.7	.46	1.3	.33
14	.67	.95	2.4	25	25	25	18	2.6	1.4	.44	1.3	.33
15	.56	2.2	2.7	253	10	19	83	2.4	1.3	.41	.60	.32
16	.59	1.1	2.9	205	65	23	19	2.7	2.4	.41	.71	.33
17	.59	1.0	2.4	128	39	34	14	2.5	1.9	.35	.49	.37
18	.51	.92	2.2	105	26	148	27	2.2	1.5	.34	.45	.41
19	.49	.79	2.0	42	30	48	14	2.5	1.2	.39	.57	.35
20	.61	.85	1.8	23	30	34	63	4.6	1.0	.38	.58	.34
21	4.4	.92	1.8	14	19	50	20	2.5	1.6	.36	.41	.31
22	1.8	.95	1.7	12	35	46	19	2.1	1.8	.34	.38	.33
23	.99	3.4	1.6	19	53	33	14	2.4	1.2	.36	.37	.34
24	.82	3.4	6.0	12	50	107	12	2.2	1.0	.36	.36	.35
25	5.1	3.4	8.7	8.1	80	37	10	2.0	.88	.36	.88	.35
26	2.3	7.0	157	6.5	52	33	9.0	1.6	.82	.37	.44	.36
27	2.7	8.1	27	25	116	26	8.0	2.5	.77	.33	.41	.34
28	1.8	3.1	7.5	38	75	48	7.4	2.1	.75	.34	.36	.31
29	1.3	1.7	15	29	52	56	6.8	2.0	.67	.34	.33	.33
30	1.8	1.3	7.6	24	---	33	6.3	5.0	.63	.38	.36	.31
31	1.1	---	7.1	20	---	26	---	6.4	---	.35	.37	---
TOTAL	40.22	56.49	544.7	1127.1	844.04	1181.5	589.1	111.0	50.22	15.14	17.46	10.09
MEAN	1.30	1.88	17.6	36.4	29.1	38.1	19.6	3.58	1.67	.49	.56	.34
MAX	5.1	8.1	157	253	116	148	83	7.2	3.3	1.2	1.4	.44
MIN	.36	.79	1.6	3.7	.54	1.1	1.9	1.6	.63	.33	.33	.29
AC-FT	80	112	1080	2240	1670	2340	1170	220	100	30	35	20

CAL YR 1975 TOTAL 4683.34 MEAN 12.8 MAX 312 MIN .26 AC-FT 9290
WTR YR 1976 TOTAL 4587.06 MEAN 12.5 MAX 253 MIN .29 AC-FT 9100

13349210 PALOUSE RIVER BELOW SOUTH FORK, AT COLFAX, WA

LOCATION.--Lat 46°53'23", long 117°22'09", in NW¼SW¼ sec.11, T.16 N., R.43 E., Whitman County, Hydrologic Unit 17060108, on left bank at Colfax, 750 ft (229 m) downstream from South Fork, 0.3 mi (0.5 km) upstream from bridge on U.S. Highway 295, and at mile 89.5 (144.0 km).

DRAINAGE AREA.--796 mi^2 (2,062 km^2).

PERIOD OF RECORD.--October 1963 to June 1973, October 1975 to September 1976.

REVISED RECORDS.--WSP 2134: 1967, 1968.

GAGE.--Water-stage recorder. Datum of gage is 1,932.22 ft (588.941 m) above mean sea level (levels by Corps of Engineers).

REMARKS.--Records good. Small diversions for irrigation above station. Slight regulation by millpond and city of Moscow, Idaho, sewage disposal plant.

AVERAGE DISCHARGE.--10 years (water years 1964-72, 1976) 428 ft^3/s (12.12 m^3/s), 310,100 acre-ft/yr (382 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 ft^3/s (416 m^3/s) Jan. 21, 1972 (gage height, 17.98 ft (5.480 m); minimum, 1.7 ft^3/s (0.048 m^3/s) Aug. 3, 23, 1966; minimum gage height, 0.88 ft (0.268 m) Aug. 3, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 3, 1963, reached a stage of 16.49 ft (5.026 m) discharge, 14,500 ft^3/s (411 m^3/s), by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 26	2315	4,000	113	9.20	2.804	Mar. 18	1645	3,780	107	8.97	2.734
Jan. 16	2045	*5,860	116	*11.06	3.371	Apr. 13	0915	3,390	96.0	8.50	2.591
Feb. 27	2245	5,500	156	10.70	3.261						

Minimum discharge, 9.6 ft^3/s (0.27 m^3/s) Oct. 3, 4, 5; minimum gage height, 1.96 ft (0.597 m) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	100	231	606	620	1170	1640	935	296	65	24	32
2	10	142	935	446	615	880	1430	1030	264	65	24	30
3	9.6	106	965	486	593	710	1190	1140	235	65	30	27
4	9.6	88	990	466	434	570	1220	1040	219	62	30	27
5	11	88	1420	446	235	514	1390	955	207	58	41	24
6	14	84	759	486	366	526	1750	900	181	53	46	22
7	21	88	860	426	394	669	1920	818	173	52	40	21
8	32	86	1560	446	450	723	1960	786	168	52	38	19
9	30	91	1390	561	422	800	2260	804	168	52	38	25
10	40	97	940	502	378	975	2480	818	168	52	38	29
11	44	89	710	692	350	1490	2130	930	163	49	32	34
12	39	88	579	822	382	822	2100	865	156	44	26	26
13	35	82	466	579	584	759	2970	678	151	40	27	26
14	50	74	354	606	920	746	2390	584	149	39	29	26
15	44	81	330	3290	890	674	2770	543	142	39	41	24
16	43	89	307	5140	1340	669	2230	486	144	34	37	26
17	39	104	271	4260	1560	786	1610	438	144	28	39	28
18	39	133	235	3380	1280	2080	1630	394	156	28	49	29
19	39	86	204	2210	1090	2650	1540	362	144	27	57	28
20	39	71	192	1540	940	1560	1910	386	116	26	57	25
21	49	76	184	1160	773	1460	2170	446	110	25	50	24
22	70	73	173	935	750	1540	1730	358	102	23	41	26
23	64	93	168	865	950	1590	1520	307	100	21	29	28
24	78	142	231	782	970	2080	1280	292	102	21	28	27
25	81	198	382	633	1310	2160	1270	278	97	19	29	27
26	98	219	1510	557	1490	1480	1190	257	93	17	36	28
27	102	307	2870	602	1930	1240	1070	231	84	15	32	42
28	129	219	1270	759	2600	1290	960	225	78	15	33	35
29	110	142	875	804	1550	1310	915	225	73	31	39	29
30	89	93	1420	728	---	1130	900	222	68	28	37	26
31	86	---	945	660	---	1130	---	260	---	26	34	---
TOTAL	1554.2	3429	23726	35875	26166	36183	51525	17993	4451	1171	1131	820
MEAN	50.1	114	765	1157	902	1167	1718	580	148	37.8	36.5	27.3
MAX	129	307	2870	5140	2600	2650	2970	1140	296	65	57	42
MIN	9.6	71	168	426	235	514	900	222	68	15	24	19
AC-FT	3080	6800	47060	71160	51900	71770	102200	35690	8830	2320	2240	1630

WTR YR 1976 TOTAL 204024.2 MEAN 557 MAX 5140 MIN 9.6 AC-FT 404700

13351000 PALOUSE RIVER AT HOOPER, WA

LOCATION.--Lat 46°45'31", long 118°08'52", in NE¼SE¼ sec.27, T.15 N., R.37 E., Whitman County, Hydrologic Unit 17060108, on left bank 150 ft (46 m) downstream from bridge on State Highway 26 at Hooper, 0.3 mi (0.5 km) upstream from Cow Creek, 3.5 mi (5.6 km) downstream from right bank tributary, 6.0 mi (9.7 km) downstream from Willow Creek, and at mile 19.6 (31.5 km).

DRAINAGE AREA.--2,500 mi^2 (6,475 km^3).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to August 1897 (gage heights only), September 1897 to December 1899, April 1900 to April 1907, June 1908 to July 1912, March 1913 to March 1916, February 1951 to current year. Prior to 1904 sometimes published as "near Hooper."

REVISED RECORDS.--WSP 1287: 1897-1904, 1910(M), 1915-16(M). WSP 1447: 1910. WSP 1934: Drainage area. WSP 1447: 1906(M). WSP 1567: 1908-9(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,040 ft (317 m), from topographic map. Apr. 1 to Aug. 31, 1897, nonrecording gage at site 2.5 mi (4.0 km) upstream at different datum. Sept. 9, 1897, to March 1916, various nonrecording gages at site 1.5 mi (2.4 km) upstream from present site at different datums. Feb. 8 to Mar. 28, 1951, nonrecording gage at present site and datum.

REMARKS.--Records good. Diversions above station for irrigation and municipal use.

AVERAGE DISCHARGE.--38 years (water years 1898-99, 1901-06, 1909-11, 1914-15, 1952-76), 633 ft^3/s (17.93 m^3/s), 458,600 acre-ft/yr (565 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,500 ft^3/s (949 m^3/s) Feb. 4, 1963, gage height, 19.13 ft (5.831 m) from rating curve extended above 18,000 ft^3/s (510 m^3/s) on basis of slope-area measurement of peak flow; no flow part or all of each day June 25, 1910, Aug. 1-17, Aug. 28 to Sept. 4, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,700 ft^3/s (105 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 27	1100	4,640	131	10.03	3.057	Feb. 17	1145	3,820	108	9.43	2.874
Jan. 17	0845	*6,590	187	*11.21	3.417	Feb. 28	1000	5,440	154	10.55	3.216

Minimum discharge, 51 ft^3/s (1.44 m^3/s) Aug. 5, 6, gage height, 3.46 ft (1.055 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	176	194	1310	1190	2360	1500	1180	377	141	60	81
2	74	170	635	938	1130	1900	2000	1220	433	141	61	71
3	76	188	1330	800	1110	1400	1700	1330	411	143	57	67
4	81	196	1100	933	997	1000	1500	1340	387	134	55	63
5	81	180	1550	1110	725	700	1600	1230	374	132	51	62
6	85	172	1320	1010	621	840	2000	1150	348	127	56	57
7	90	174	938	876	582	850	2280	1080	323	120	68	57
8	90	174	1590	915	658	1000	2250	997	314	117	85	56
9	96	176	1820	1470	710	1100	2370	968	308	117	85	55
10	110	182	1530	1000	705	1200	2730	985	305	116	81	56
11	110	192	1140	1320	677	1700	2570	1100	296	114	82	61
12	120	186	938	1650	658	2500	2310	1200	285	107	76	65
13	124	180	805	1240	887	1400	2850	1020	268	100	71	69
14	119	178	635	1180	1080	1200	3120	837	258	99	69	71
15	114	178	573	2820	1480	1100	2840	739	255	92	72	68
16	122	176	565	6020	1890	1000	3050	691	255	89	74	65
17	122	180	520	6000	3100	1000	2320	617	288	85	72	62
18	117	184	465	4810	2570	1300	1950	557	291	88	74	65
19	114	203	423	4010	2200	2500	2180	524	268	82	67	67
20	114	199	398	2940	1870	3400	1920	504	258	77	72	67
21	120	178	370	2290	1660	1900	2700	524	229	77	83	65
22	122	168	367	1900	1440	1800	2360	578	220	74	89	61
23	127	174	345	1620	1560	1900	2090	500	213	67	82	57
24	141	186	358	1520	1760	2000	1850	451	205	63	74	59
25	146	211	484	1360	1860	2500	1680	433	199	65	82	62
26	163	263	1090	1170	2550	2700	1650	415	190	65	95	63
27	167	291	4140	1060	2450	1900	1520	391	178	62	90	63
28	184	358	2650	1130	3670	1600	1380	371	170	62	83	62
29	186	302	1650	1320	2960	1700	1260	361	157	60	81	62
30	201	209	1870	1380	---	1700	1210	358	150	59	77	69
31	188	---	1990	1290	---	1500	---	358	---	60	79	---
TOTAL	3780	5984	33783	58392	44750	50650	62740	24009	8213	2935	2303	1908
MEAN	122	199	1090	1884	1543	1634	2091	774	274	94.7	74.3	63.6
MAX	201	358	4140	6020	3670	3400	3120	1340	433	143	95	81
MIN	74	168	194	800	582	700	1210	358	150	59	51	55
AC-FT	7500	11870	67010	115800	88760	100500	124400	47620	16290	5820	4570	3780

CAL YR 1975 TOTAL 320641 MEAN 878 MAX 6700 MIN 61 AC-FT 636000
WTR YR 1976 TOTAL 299447 MEAN 818 MAX 6020 MIN 51 AC-FT 594000

NOTE.--No gage-height record Mar. 2 to Apr. 6.

13351000 PALOUSE RIVER AT HOOPER, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years, 1959-71, 1974 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1961 to September 1971.
SUSPENDED SEDIMENT: October 1961 to September 1971.

COOPERATION.--Temperature, dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
08...	0930	86	340	7.9	11.1	--	67	10.3	430	45
22...	1015	122	300	6.9	9.8	37	17	7.6	850	95
NOV										
12...	1030	188	255	6.9	8.1	55	550	7.6	820	70
19...	1040	207	275	6.9	3.6	40	400	7.7	645	50
DEC										
09...	1115	1800	180	7.8	8.9	45	355	7.6	410	40
16...	1045	569	320	7.3	3.3	66	160	7.8	400	32
JAN										
07...	1030	874	200	7.4	3.5	60	230	8.8	390	55
21...	1115	2230	280	6.3	2.9	56	177	11.9	285	38
FEB										
04...	1010	1020	160	6.8	.7	50	205	10.0	310	30
25...	1040	1700	190	7.6	5.1	60	140	14.0	1230	156
MAR										
09...	1030	1100	220	7.1	4.4	51	8	8.6	375	26
23...	1015	1800	165	6.3	6.5	58	175	14.2	480	31
APR										
14...	1015	3170	115	7.6	8.9	47	150	10.2	400	75
27...	0945	1530	145	6.3	9.7	47	140	7.3	315	33
MAY										
12...	0915	1200	130	6.3	13.0	50	150	8.9	200	17
26...	1000	420	170	7.4	16.5	32	8	11.3	370	28
JUN										
09...	1015	309	205	6.4	20.8	42	3	8.1	114	15
23...	1015	213	183	6.4	16.9	30	21	8.6	220	31
JUL										
14...	1000	99	230	7.0	21.2	25	10	8.0	200	18
27...	1015	62	195	6.3	21.7	31	18	8.1	115	<10
AUG										
11...	1030	85	275	7.1	22.2	29	16	7.6	90	<10
24...	1015	75	300	6.0	21.4	30	16	10.8	110	17
SEP										
14...	0945	71	300	7.4	15.6	31	11	8.7	230	45
28...	1030	63	310	6.7	18.4	31	15	11.7	70	<10

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)
OCT									
08...	130	0	33	12	26	5.4	205	168	4.1
22...	130	0	32	11	22	4.8	183	150	37
NOV									
12...	100	0	27	8.8	19	4.3	152	125	31
19...	110	0	28	9.8	21	4.1	163	134	33
DEC									
09...	63	5	17	5.1	12	5.2	71	58	1.8
16...	83	0	22	6.8	13	4.2	107	88	8.6
JAN									
07...	75	0	19	6.8	12	3.7	98	80	6.2
21...	73	7	19	6.1	12	3.9	80	66	64
FEB									
04...	91	5	23	8.2	13	3.7	105	86	27
25...	80	4	22	6.1	13	4.0	93	76	3.7
MAR									
09...	89	4	24	7.0	15	3.4	103	84	13
23...	69	10	18	5.9	11	3.1	72	59	58
APR									
14...	49	1	13	4.1	9.3	3.1	59	48	2.4
27...	57	0	15	4.8	9.5	2.7	77	63	62
MAY									
12...	51	0	14	3.8	9.9	3.1	74	61	59
26...	73	0	19	6.2	13	2.8	105	91	7.1
JUN									
09...	87	0	22	7.7	17	3.5	133	109	85
23...	100	0	26	8.6	18	3.8	153	126	97
JUL									
14...	120	0	32	10	21	4.3	177	145	28
27...	120	0	32	10	21	4.4	185	152	148
AUG									
11...	130	0	33	11	24	4.6	188	154	24
24...	130	0	33	11	23	5.4	188	154	301
SEP									
14...	130	0	32	12	25	4.4	200	164	13
28...	140	0	33	13	27	4.5	206	169	66

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)
OCT									
08...	13	12	.77	.01	.23	.87	1.1	.24	.15
22...	11	9.7	1.4	.01	.15	.51	.66	.37	.26
NOV									
12...	13	7.5	3.5	.01	.11	.52	.63	.32	.25
19...	9.3	8.0	1.8	.01	.09	.41	.50	.35	.25
DEC									
09...	13	4.4	5.0	.05	.38	7.4	7.8	2.0	.15
16...	11	3.5	3.2	.03	.28	.58	.86	.28	.15
JAN									
07...	7.5	3.6	2.9	.06	1.0	1.1	2.1	.62	.16
21...	12	2.5	4.0	.05	.54	1.2	1.7	.44	.13
FEB									
04...	12	3.3	4.6	.03	.50	.90	1.4	.36	.15
25...	11	3.0	4.9	.06	.91	2.1	3.0	.78	.15
MAR									
09...	11	2.9	4.8	.04	.55	1.4	2.0	.67	.15
23...	9.0	2.5	5.0	.04	.59	2.8	3.4	1.2	.12
APR									
14...	6.1	2.7	2.5	.09	.71	2.0	2.7	1.1	.06
27...	6.8	2.5	2.3	.03	.15	.50	.65	.22	.09
MAY									
12...	6.9	2.3	1.8	.05	.46	4.9	5.4	1.9	.12
26...	7.9	3.6	1.1	.02	.15	.85	1.0	.13	.07
JUN									
09...	9.1	5.1	.81	.02	.19	1.1	1.3	.13	.04
23...	7.9	5.6	1.7	.08	.33	1.3	1.6	.42	.19
JUL									
14...	9.4	7.2	.39	.02	.32	1.3	1.6	.27	.12
27...	12	8.0	.01	.01	.29	1.7	2.0	.35	.11
AUG									
11...	12	9.5	.00	.01	.21	1.1	1.3	.40	.13
24...	12	11	.61	.03	.25	2.2	2.5	.42	.12
SEP									
14...	12	11	.20	.01	.18	1.1	1.3	.22	.05
28...	12	13	.18	.02	.41	1.2	1.6	.28	.10

13351800 SPRAGUE LAKE NEAR SPRAGUE, WA

LOCATION.--Lat 47°16'47", long 118°01'26", in NE¼SE¼ sec.28, T.21 N., R.38 E., Lincoln County, Hydrologic Unit 17060108, on southeast shore 3.1 mi (5.0 km) southwest of Sprague.

DRAINAGE AREA.--289 mi² (749 km²).

PERIOD OF RECORD.--September 1958 to current year. Prior to October 1960, published as Colville Lake near Sprague. Chemical analyses April 1975 to September 1975.

REVISED RECORDS.--WSP 1934: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Jan. 1, 1975, nonrecording gages at several sites, all at present datum except period Sept. 11, 1958 to Sept. 30, 1959, which was at datum 1,865.53 ft (568.614 m) higher.

REMARKS.--Some regulation by small dam at outlet. No known diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,881.93 ft (573.612 m) from high-water mark, occurred during the period Jan. 13-29, 1974; minimum observed, 1,875.14 ft (571.543 m) Nov. 2, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Lake reached an elevation at 1,881.75 ft (573.557 m) in March 1956 (from high-water mark).

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,879.70 ft (572.933 m) Apr. 20; minimum observed, 1,877.75 ft (572.338 m) Dec. 22.

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1877.90	1877.93	1877.99	1877.85	1878.27	1879.13	1879.44	1879.43	1879.22	1878.97	1878.36	1878.02
2	1877.89	1877.94	1878.01	1877.84	1878.29	1879.13	1879.44	1879.45	1879.22	1878.94	1878.34	1878.00
3	1877.92	1877.94	1878.00	1877.84	1878.28	1879.17	1879.44	1879.42	1879.21	1878.93	1878.33	1877.98
4	1877.96	1877.92	1878.01	1877.88	1878.27	1879.19	1879.46	1879.42	1879.20	1878.92	1878.31	1877.97
5	1877.94	1877.93	1877.96	1877.90	1878.33	1879.21	1879.46	1879.40	1879.19	1878.91	1878.30	1877.97
6	1877.93	1877.94	1877.94	1877.89	1878.35	1879.23	1879.48	1879.37	1879.18	1878.90	1878.30	1877.97
7	1877.93	1877.96	1877.96	1877.88	1878.36	1879.27	1879.47	1879.35	1879.17	1878.90	1878.28	1877.92
8	1877.91	1877.95	1877.96	1877.89	1878.38	1879.30	1879.50	1879.35	1879.18	1878.92	1878.26	1877.90
9	1877.90	1877.93	1877.95	1877.89	1878.40	1879.32	1879.51	1879.33	1879.19	1878.90	1878.26	1877.88
10	1877.90	1877.93	1877.94	1877.89	1878.40	1879.34	1879.48	1879.33	1879.19	1878.87	1878.24	1877.88
11	1877.90	1877.94	1877.92	1877.89	1878.42	1879.33	1879.51	1879.32	1879.19	1878.86	1878.24	1877.89
12	1877.90	1877.93	1877.91	1877.89	1878.43	1879.35	1879.51	1879.26	1879.18	1878.84	1878.24	1877.89
13	1877.91	1877.93	1877.89	1877.89	1878.44	1879.34	1879.53	1879.25	1879.15	1878.78	1878.22	1877.86
14	1877.90	1877.94	1877.87	1877.92	1878.49	1879.35	1879.56	1879.21	1879.14	1878.74	1878.22	1877.86
15	1877.89	1877.99	1877.86	1877.94	1878.52	1879.34	1879.58	1879.17	1879.14	1878.69	1878.22	1877.85
16	1877.88	1877.96	1877.85	1877.96	1878.66	1879.35	1879.55	1879.15	1879.15	1878.65	1878.20	1877.86
17	1877.88	1877.96	1877.83	1878.02	1878.79	1879.35	1879.56	1879.14	1879.13	1878.64	1878.15	1877.86
18	1877.90	1877.94	1877.82	1878.05	1878.85	1879.37	1879.57	1879.09	1879.12	1878.63	1878.14	1877.87
19	1877.90	1877.93	1877.81	1878.07	1878.82	1879.38	1879.54	1879.11	1879.13	1878.61	1878.13	1877.85
20	1877.87	1877.94	1877.80	1878.08	1878.85	1879.37	1879.60	1879.15	1879.11	1878.60	1878.13	1877.84
21	1877.88	1877.94	1877.79	1878.08	1878.85	1879.34	1879.54	1879.14	1879.11	1878.61	1878.11	1877.84
22	1877.89	1877.94	1877.78	1878.09	1878.87	1879.36	1879.53	1879.17	1879.11	1878.58	1878.09	1877.84
23	1877.88	1877.96	1877.77	1878.10	1878.90	1879.37	1879.52	1879.19	1879.09	1878.56	1878.08	1877.84
24	1877.87	1877.97	1877.78	1878.10	1878.94	1879.49	1879.54	1879.21	1879.11	1878.54	1878.07	1877.84
25	1877.90	1877.97	1877.78	1878.11	1878.98	1879.47	1879.52	1879.24	1879.05	1878.52	1878.11	1877.83
26	1877.93	1877.99	1877.78	1878.12	1879.03	1879.44	1879.48	1879.23	1879.02	1878.52	1878.09	1877.82
27	1877.92	1877.95	1877.88	1878.14	1879.07	1879.44	1879.45	1879.25	1879.01	1878.47	1878.06	1877.82
28	1877.93	1877.96	1877.87	1878.16	1879.10	1879.42	1879.45	1879.25	1878.98	1878.46	1878.05	1877.82
29	1877.92	1877.96	1877.87	1878.19	1879.11	1879.43	1879.45	1879.24	1878.99	1878.44	1878.03	1877.82
30	1877.94	1877.98	1877.88	1878.22	---	1879.41	1879.45	1879.24	1878.98	1878.41	1878.03	1877.82
31	1877.93	---	1877.87	1878.24	---	1879.44	---	1879.24	---	1878.39	1878.02	---
MEAN	1877.91	1877.95	1877.88	1878.00	1878.64	1879.34	1879.50	1879.26	1879.13	1878.70	1878.18	1877.88
MAX	1877.96	1877.99	1878.01	1878.24	1879.11	1879.49	1879.60	1879.45	1879.22	1878.97	1878.36	1878.02
MIN	1877.87	1877.92	1877.77	1877.84	1878.27	1879.13	1879.44	1879.09	1878.98	1878.39	1878.02	1877.82

WTR YR 1976 MEAN 1878.53 MAX 1879.60 MIN 1877.77

13353000 SNAKE RIVER BELOW ICE HARBOR DAM, WA

LOCATION.--Lat 46°14'53", long 118°52'43", in NE¼SW¼, sec.24, T.9 N., R.31 E., Walla Walla County, Hydrologic Unit 17060110, in powerhouse forebay pier P-1 on south side of Bay 1 at Ice Harbor Dam, 8.0 mi (12.9 km) northeast of Burbank, and at mile 9.7 (15.6 km).

DRAINAGE AREA.--108,500 mi² (281,000 km²), approximately.

PERIOD OF RECORD.--October 1907 to March 1917 (gage heights only October 1907 to August 1909), March 1962 to current year. Published as "at Burbank" prior to 1911 and as "near Burbank" 1912-17. Chemical analyses October 1965 to September 1969, October 1971 to September 1972. For records collected at site 7.5 mi (12.1 km) downstream see station 13353200.

REVISED RECORDS.--WSP 1317: Drainage area.

GAGE.--Watt-hour meters on each turbine in Ice Harbor Dam powerhouse. Elevations are at mean sea level datum. Oct. 2, 1907, to Mar. 31, 1917, nonrecording gage at site approximately 2 mi (3.2 km) downstream at datum 300 ft (91 m) higher. Mar. 23, 1962, to Sept. 30, 1968, water-stage recorder 1.0 mi (1.6 km) downstream at mean sea level datum.

REMARKS.--Records computed from power output, flow over spillway, flow through fish ladder, and lockage records at Ice Harbor Dam. Diversions above station for irrigation of over 4,090,000 acres (16,600 km²). Flow regulated by Lake Sacajawea and many storage reservoirs and powerplants upstream.

COOPERATION.--Records furnished by Corps of Engineers. Records not reviewed but five discharge measurements made by the Geological Survey to verify turbine and spilway ratings.

AVERAGE DISCHARGE.--21 years (water years 1910-16, 1963-76) 57,840 ft³/s (1,638 m³/s), 41,910,000 acre-ft/yr (51,700 hm³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 312,000 ft³/s (8,840 m³/s) June 19, 1974; no flow momentarily Aug. 27, 1965 (result of testing at Ice Harbor Dam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1948, reached an elevation of 361.9 ft (110.31 m) at a site 0.7 mi (1.1 km) downstream from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 208,000 ft³/s (5,890 m³/s) May 11; maximum forebay elevation, 440.1 ft (134.14) Oct. 19, Feb. 26; Aug. 5; minimum discharge, 200 ft (5.66 m³/s) on many days between July 22 and Sept. 30; minimum forebay elevation, 437.0 ft (133.20 m) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30900	33200	42500	43100	57800	77200	78500	94800	138000	77800	14000	32500
2	29600	33600	58200	53300	61300	71100	81000	108000	130000	86500	32500	31200
3	31300	35200	86800	51100	60600	64200	75400	119000	125000	58500	25200	25500
4	31800	39200	74000	52300	63900	63200	70700	126000	120000	60500	29100	28800
5	21900	42700	81900	54500	54900	58600	82600	143000	115000	61100	40700	11900
6	20900	44300	75000	58600	54100	53600	92900	143000	120000	64400	39300	18000
7	33500	42600	66200	51600	52400	57500	96700	125000	123000	67200	35100	32800
8	32300	43100	102000	43300	51100	60900	103000	150000	141000	59300	27500	33500
9	38300	43600	91800	50600	53700	48800	135000	162000	150000	51900	35500	26300
10	37200	43200	85800	49300	39300	53000	140000	166000	144000	54300	37600	16600
11	31400	43200	75500	55800	44100	63400	148000	187000	137000	46200	32000	23300
12	30500	42600	77900	58700	56700	63500	152000	189000	132000	51300	26200	23400
13	31800	40000	85400	51000	55300	59200	153000	170000	130000	54600	29200	33200
14	31000	38500	86100	50400	54900	57800	137000	174000	114000	51100	24000	28600
15	32700	24900	78000	51700	62200	64500	142000	191000	102000	55300	21700	27300
16	30400	34500	59800	73800	61300	61700	138000	177000	109000	50700	30100	35800
17	32400	37500	58600	86500	64700	55100	122000	168000	117000	27100	19000	35300
18	28400	40100	60200	78200	62800	61700	115000	165000	130000	27100	39200	30800
19	26400	39800	54500	74100	64600	76400	110000	157000	124000	44200	32700	38000
20	32900	42400	54100	67500	62800	82700	106000	156000	125000	47100	24000	39600
21	31400	43100	55200	64400	63800	76200	117000	163000	128000	41300	25700	32100
22	32400	41200	54100	65800	57400	70900	104000	145000	127000	40200	32200	27400
23	43000	36400	46400	68100	60000	64100	106000	148000	127000	37800	34000	33600
24	48000	36900	45000	59600	57600	65800	111000	149000	101000	37300	24800	38400
25	39800	40900	43300	61300	59100	77300	109000	152000	99700	30700	33000	34100
26	37900	41700	44300	62300	62800	78000	117000	159000	86300	35700	41500	36400
27	40200	39000	64600	60500	63400	78500	108000	152000	78800	40100	20100	35400
28	31200	43000	63800	57700	64300	81400	111000	151000	81700	39100	34900	36700
29	32000	42500	60100	63100	74100	70000	93100	161000	77700	46400	23600	35800
30	37000	40700	59400	60400	---	69200	84700	140000	83000	32100	46400	39000
31	36400	---	51600	65000	---	72600	---	145000	---	16400	8100	---
TOTAL	1024900	1189600	2042100	1843600	1701000	2058100	3339600	4735800	3516200	1493300	918900	921300
MEAN	33060	39650	65870	59470	58660	66390	111300	152800	117200	48170	29640	30710
MAX	48000	44300	102000	86500	74100	82700	153000	191000	150000	86500	46400	39600
MIN	20900	24900	42500	43100	39300	48800	70700	94800	77700	16400	8100	11900
AC-FT	2033000	2360000	4051000	3657000	3374000	4082000	6624000	9393000	6974000	2962000	1823000	1827000

CAL YR 1975 TOTAL 23666800 MEAN 64840 MAX 185000 MIN 14600 AC-FT 46940000
WTR YR 1976 TOTAL 24784400 MEAN 67720 MAX 191000 MIN 8100 AC-FT 49160000

13353200 SNAKE RIVER AT BURBANK, WA
(National Stream Quality Accounting Network Station)

LOCATION.--Lat 48°12'59", long 119°01'22", in NE¼SW¼ sec.35, T.9 N., R.30 E., Franklin County, Hydrologic Unit 17060110, at U.S. Highway 395/410 bridge at Burbank, 2.2 mi (3.5 km) upstream from mouth and 7.5 mi (12.1 km) downstream from Ice Harbor Dam.

DRAINAGE AREA.--108,800 mi² (281,800 km²).

PERIOD OF RECORD.--Water years 1960-69, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1973 to current year.
WATER TEMPERATURES; April 1973 to current year.

INSTRUMENTATION.--Water quality monitor since March 1973.

REMARKS.--July 1960 to August 1962, at site 0.7 mi downstream and August 1962 to September 1963, at present site, published as "near Pasco"; and October 1963 to September 1965, at present site and published as 13353000 "below Ice Harbor Dam". For records collected at site 7.5 mi (12.1 km) upstream see station 13353000. Flow data routed from station 13353000.

COOPERATION.--Water discharge values furnished by the Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 385 micromhos Jan. 14, 1975; minimum, 72 micromhos June 20, 1974.
WATER TEMPERATURES; Maximum, 24.0°C Aug. 3, 7, 8, 1973, Aug. 4, 1974; minimum recorded, 1.5°C Feb. 8-12, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 321 micromhos Oct. 29; minimum, 89 micromhos June 19, 20.
WATER TEMPERATURES: Maximum, 22.0°C Aug. 12, 14, 15, 24, Sept. 3, 4; minimum, 2.0°C Feb. 5-8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
OCT 20...	1130	36000	260	7.8	15.2	2	4	13	160	81	0	22
NOV 17...	1030	39300	249	7.8	8.9	2	7	4	25	87	0	22
DEC 16...	0945	59100	194	8.2	4.7	10	200	26	30	74	3	19
JAN 20...	1040	67400	233	7.7	3.7	30	11	39	13	95	0	24
FEB 24...	0930	62300	269	8.1	3.5	30	100	4	16	110	4	27
MAR 15...	1015	66800	247	8.2	4.4	11	3	<1	11	94	1	25
APR 21...	1020	84200	150	8.0	9.0	14	6	4	--	68	2	17
MAY 13...	0925	169000	132	8.0	12.0	10	1	4	15	54	0	15
JUN 14...	0955	118000	119	7.6	14.2	8	5	2	4	44	0	12
JUL 13...	1200	51100	108	7.8	18.2	5	4	3	3	40	0	11
AUG 23...	1010	23000	160	7.6	20.7	3	1	3	4	66	2	19
SEP 20...	1100	49300	232	7.5	19.5	3	3	3	46	86	6	22

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT 20...	6.4	20	2.7	110	90	2.8	27	10	.3	15	156	158
NOV 17...	7.8	19	2.7	112	92	2.8	25	9.2	.3	17	168	158
DEC 16...	6.5	15	2.4	87	71	.9	21	7.3	.2	19	146	133
JAN 20...	8.4	17	2.5	116	95	3.7	24	10	.3	19	168	163
FEB 24...	9.8	18	2.9	126	103	1.6	30	12	.4	20	205	182
MAR 15...	7.6	15	2.6	113	93	1.1	24	9.4	.3	21	162	161
APR 21...	6.3	11	2.3	81	66	1.3	15	5.9	.2	19	125	117
MAY 13...	4.1	7.7	1.6	66	54	1.1	10	4.1	.2	15	85	90
JUN 14...	3.5	6.5	1.2	55	45	1.4	10	3.7	.2	10	82	74
JUL 13...	3.1	6.6	1.2	52	43	1.3	8.2	3.3	.2	9.8	76	69
AUG 23...	4.4	11	1.9	78	64	2.0	16	5.9	.2	10	103	107
SEP 20...	7.6	17	2.5	98	80	5.0	23	9.0	.3	12	137	142

13353200 SNAKE RIVER AT BURBANK, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL NON-FILT-RABLE RESIDUE (MG/L)	SUS-PENDED SOLIDS (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT 20...	--	--	.36	.02	.38	.04	.19	.05	.03	6	583	99
NOV 17...	--	--	.49	.01	.50	.06	.30	.05	.01	8	849	99
DEC 16...	9	--	.65	.01	.66	.18	.37	.08	.05	19	3030	100
JAN 20...	--	--	.76	.02	.78	.30	.51	.13	.04	59	10700	100
FEB 24...	--	--	.75	.03	.78	.46	.61	.14	.05	54	9080	100
MAR 15...	--	--	.77	.02	.79	.15	.40	.08	.06	15	2710	100
APR 21...	--	--	.44	.01	.45	.14	.56	.10	.04	30	6820	100
MAY 13...	27	--	.15	.03	.18	.09	.30	.09	.02	32	14600	97
JUN 14...	--	--	.07	.01	.08	.05	.20	.05	.02	23	7330	100
JUL 13...	--	4	.00	.01	.00	.04	.22	.04	.01	11	1520	91
AUG 23...	0	--	.04	.00	.04	.03	.18	.03	.00	6	373	98
SEP 20...	3	--	.16	.01	.17	.04	.22	.04	.02	6	799	94

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT 20...	1130	4	4	0	0	60	0	30	2	10	26	240
JAN 20...	1040	3	2	<10	0	0	0	<50	1	10	2	2700
APR 21...	1020	2	1	<10	1	10	0	<50	0	10	8	1800
JUL 13...	1200	1	2	<10	1	0	0	<50	0	10	2	300

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 20...	0	<100	3	10	10	.0	.0	0	0	50	40	2.6
JAN 20...	120	<100	4	80	0	.1	.0	0	0	20	0	4.1
APR 21...	140	<100	3	40	0	.0	.0	0	0	10	0	3.8
JUL 13...	10	<100	6	20	0	.0	.0	0	0	0	0	14

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL FILT-RABLE RESIDUE (MG/L)	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)
DEC 16...	0945	140	11	.5	5.3	.9	4.4	.8	.02
MAY 13...	0925	100	<1.6	1.9	2.8	1.2	2.2	1.0	.04

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m²) Dry weight	Ash weight	Chlorophyll a (mg/m²)	Chlorophyll b (mg/m²)	Biomass pigment ratio	Sampling method
Jan. 20	35	0.0	0.0	0.0	0.0	0.0	Polyethylene strip
Apr. 21	37	20.2	18.5	18.2	0.000	93	
July 13	29	16.4	14.2	11.0	0.000	200	

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                                 IDENTIFICATION OF PHYTOPLANKTON

                                        2,100 CELLS/ML

OCT. 20, 1975  _ORGANISM__NAME_____________  _COMMON__NAME______  CELLS/ML      PER_CENT
   1130 HOURS
               CHLOROPHYTA                   GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...MICRACTINIACEAE
               ....MICRACTINIUM                                      470           22
               ...OOCYSTACEAE
               ....ANKISTRODESMUS                                     24            1
               ...SCENEDESMACEAE
               ....SCENEDESMUS                                    ---120          --5
                                                       TOTALS        610           28       0.964=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE            DIATOMS
               ..CENTRALES                   CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                        760           36
             D ....MELOSIRA                                          520           25
               ..PENNALES                    PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                         24            1
               ...FRAGILARIACEAE
               ....ASTERIONELLA                                       58            3
               ...NAVICULACEAE               NAVICULOID
               ....NAVICULA                                          150            7
             L ....STAURONEIS                                                       0
               ...NITZSCHIACEAE
             L ....NITZSCHIA                                                        0
               ...SURIRELLACEAE
             L ....SURIRELLA                                      ------          --0
                                                       TOTALS      1,500           72       1.645=DIVERSITY

             NOTE: D = DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L = LESS THAN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                  PHYL/DIV 0.866
                                     CLASS 0.856
                                     ORDER 1.307
                                    FAMILY 1.726
                                    GENERA 2.315
                   SAMPLING METHOD - EDI

                                        640 CELLS/ML

NOV. 17, 1975  _ORGANISM__NAME_____________  _COMMON__NAME______  CELLS/ML      PER_CENT
   1030 HOURS
               CHLOROPHYTA                   GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...SCENEDESMACEAE
               ....TETRASTRUM                                     ----40          --6
                                                       TOTALS         40            6       0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE            DIATOMS
               ..CENTRALES                   CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                        280           44
               ....MELOSIRA                                           70           11
               ..PENNALES                    PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                         20            3
             L ....RHOICOSPHENIA                                                    0
               ...CYMBELLACEAE
               ....CYMBELLA                                           10            2
               ...FRAGILARIACEAE
               ....ASTERIONELLA                                       10            2
             D ....FRAGILARIA                                        100           16
               ...NAVICULACEAE               NAVICULOID
               ....NAVICULA                                           20            3
               ...NITZSCHIACEAE
               ....NITZSCHIA                                      ----40          --6
                                                       TOTALS        550           87       2.155=DIVERSITY

               CYANOPHYTA                    BLUE-GREEN ALGAE
               .MYXOPHYCEAE
               ..OSCILLATORIALES             FILAMENTOUS
               ...NOSTOCACEAE
               ....APHANIZOMENON                                  ----50          --8
                                                       TOTALS         50            8       0.000=DIVERSITY

             NOTE: D = DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L = LESS THAN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                  PHYL/DIV 0.725
                                     CLASS 0.725
                                     ORDER 1.538
                                    FAMILY 2.106
                                    GENERA 2.577
                   SAMPLING METHOD - EDI
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13353200 SNAKE RIVER AT BURBANK, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

```
                                         720 CELLS/ML

DEC. 16, 1975  _ORGANISM__NAME_______________  _COMMON__NAME______  CELLS/ML     PER_CENT
  0945 HOURS
                 CHLOROPHYTA                    GREEN ALGAE
                 .CHLOROPHYCEAE
                 ..CHLOROCOCCALES
                 ...SCENEDESMACEAE
               L ....SCENEDESMUS
               D ....TETRASTRUM                                                    0
                                                                  ---210          29
                                                         TOTALS      210          29      0.000=DIVERSITY
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE             DIATOMS
                 ..CENTRALES                    CENTRIC
                 ...COSCINODISCACEAE
               D ....CYCLOTELLA
               L ....MELOSIRA                                        310          43
                 ..PENNALES                     PENNATE                            0
                 ...CYMBELLACEAE
                 ....EPITHEMIA
                 ...DIATOMACEAE                                      100          14
               L ....DIATOMA
                 ...GOMPHONEMATACEAE                                               0
               L ....GOMPHONEMA
                 ...NAVICULACEAE                NAVICULOID                         0
                 ....NAVICULA
                                                                  ---100          14
                                                         TOTALS      510          71      1.371=DIVERSITY

             NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                    PHYL/DIV 0.863
                                       CLASS 0.863
                                       ORDER 1.557
                                      FAMILY 1.842
                                      GENERA 1.842
                   SAMPLING METHOD - EDI


                                         560 CELLS/ML

JAN. 20, 1976  _ORGANISM__NAME_______________  _COMMON__NAME______  CELLS/ML     PER_CENT
  1040 HOURS
                 CHRYSOPHYTA
                 .BACILLARIOPHYCEAE             DIATOMS
                 ..CENTRALES                    CENTRIC
                 ...COSCINODISCACEAE
                 ....CYCLOTELLA
               D ....MELOSIRA                                         56          10
                 ..PENNALES                     PENNATE              390          70
                 ...ACHNANTHACEAE
               L ....ACHNANTHES
               L ....COCCONEIS                                                     0
                 ...CYMBELLACEAE                                                   0
               L ....CYMBELLA
                 ...NAVICULACEAE                NAVICULOID                         0
                 ....NAVICULA
                 ...NITZSCHIACEAE                                     56          10
               L ....HANTZSCHIA
                 ....NITZSCHIA                                                     0
                                                                   ---56          10
                                                         TOTALS      560         100      1.357=DIVERSITY
                 CYANOPHYTA                     BLUE-GREEN ALGAE
                 .MYXOPHYCEAE
                 ..OSCILLATORIALES              FILAMENTOUS
                 ...OSCILLATORIACEAE
               L ....OSCILLATORIA
                                                                                   0

             NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                       ORDER 0.722
                                      FAMILY 0.922
                                      GENERA 1.357
                   SAMPLING METHOD - EDI
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13353200 SNAKE RIVER AT BURBANK, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

2.200 CELLS/ML

FEB. 24, 1976 0930 HOURS		_ORGANISM__NAME_____________	_COMMON__NAME______	CELLS/ML	PER_CENT	
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....CYCLOTELLA		35	2	
	D	....MELOSIRA		1.200	53	
		..PENNALES	PENNATE			
		...FRAGILARIACEAE				
	D	....ASTERIONELLA		950	42	
		....SYNEDRA		35	2	
		...NAVICULACEAE	NAVICULOID			
		....NAVICULA		35	2	
			TOTALS	2.200	101	1.291=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
ORDER 0.994
FAMILY 1.092
GENERA 1.291
SAMPLING METHOD - EDI

1.200 CELLS/ML

MAR. 15, 1976 1015 HOURS		_ORGANISM__NAME_____________	_COMMON__NAME______	CELLS/ML	PER_CENT	
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..PENNALES	PENNATE			
		...FRAGILARIACEAE				
	L	....M.ARCUS			0	
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
	D	....CYCLOTELLA		270	23	
	D	....MELOSIRA		260	22	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....ACHNANTHES		24	2	
		...CYMBELLACEAE				
		....CYMBELLA		24	2	
		...DIATOMACEAE				
	L	....DIATOMA			0	
		...FRAGILARIACEAE				
	D	....ASTERIONELLA		300	26	
		....FRAGILARIA		160	14	
		....SYNEDRA		24	2	
		...GOMPHONEMATACEAE				
	L	....GOMPHONEMA			0	
		...NAVICULACEAE	NAVICULOID			
		....NAVICULA		61	5	
		...NITZSCHIACEAE				
		....NITZSCHIA		12	1	
		...SURIRELLACEAE				
		....SURIRELLA		24	2	
			TOTALS	1.200	99	2.631=DIVERSITY
		PYRRHOPHYTA	FIRE ALGAE			
		.DINOPHYCEAE	DINOFLAGELLATES			
		..PERIDINIALES				
		...GLENODINIACEAE				
		....GLENODINIUM		12	1	
			TOTALS	12	1	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.084
CLASS 0.084
ORDER 1.057
FAMILY 1.754
GENERA 2.687
SAMPLING METHOD - EDI

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

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                                    1.800 CELLS/ML

APR. 21, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML   PER_CENT
 1020 HOURS
               CHLOROPHYTA                     GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...OOCYSTACEAE
             L ....ANKISTRODESMUS                                                 0
               ..VOLVOCALES
               ...CHLAMYDOMONADACEAE
             L ....CHLAMYDOMONAS                                                  0

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE              DIATOMS
               ..PENNALES                      PENNATE
               ...FRAGILARIACEAE
             L ....M.ARCUS                                                        0
               ..CENTRALES                     CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                        620         36
               ....MELOSIRA                                          210         12
               ..PENNALES                      PENNATE
               ...ACHNANTHACEAE
             L ....COCCONEIS                                                      0
               ....RHOICOSPHENIA                                      30          2
               ...CYMBELLACEAE
               ....CYMBELLA                                           30          2
             L ....EPITHEMIA                                                      0
               ...DIATOMACEAE
             L ....DIATOMA                                                        0
               ...FRAGILARIACEAE
             D ....ASTERIONELLA                                      540         31
               ....FRAGILARIA                                         30          2
               ....SYNEDRA                                            30          2
               ...GOMPHONEMATACEAE
               ....GOMPHONEMA                                         60          3
               ...NAVICULACEAE                 NAVICULOID
               ....NAVICULA                                          150          8
               ...NITZSCHIACEAE
               ....NITZSCHIA                                          30          2
               ...SURIRELLACEAE
               ....SURIRELLA                                          30          2
               ...TABELLARIACEAE
             L ....TABELLARIA                                                     0
                                                                  ------         --
                                                      TOTALS       1.800        102        2.483=DIVERSITY

             NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                       ORDER 0.998
                                      FAMILY 1.905
                                      GENERA 2.483

                                    6.900 CELLS/ML

MAY 13, 1976   _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML   PER_CENT
 0925 HOURS
               CHLOROPHYTA                     GREEN ALGAE
               .CHLOROPHYCEAE
               ..CHLOROCOCCALES
               ...MICRACTINIACEAE
               ....MICRACTINIUM                                      920         13
                                                                  ------         --
                                                      TOTALS         920         13        0.000=DIVERSITY

               CHRYSOPHYTA
               .BACILLARIOPHYCEAE              DIATOMS
               ..CENTRALES                     CENTRIC
               ...COSCINODISCACEAE
             D ....CYCLOTELLA                                      4.700         68
               ....MELOSIRA                                          110          2
               ..PENNALES                      PENNATE
               ...ACHNANTHACEAE
               ....ACHNANTHES                                        230          3
               ...FRAGILARIACEAE
               ....ASTERIONELLA                                      340          5
               ...NAVICULACEAE                 NAVICULOID
               ....NAVICULA                                          230          3
               ...NITZSCHIACEAE
               ....NITZSCHIA                                         340          5
               ...SURIRELLACEAE
             L ....SURIRELLA                                                      0
                                                                  ------         --
                                                      TOTALS       6.000         86        1.216=DIVERSITY

             NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
                   L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
                   ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                   DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
                                    PHYL/DIV 0.567
                                       CLASS 0.567
                                       ORDER 1.179
                                      FAMILY 1.507
                                      GENERA 1.621
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SAMPLING METHOD - EDI

13353200 SNAKE RIVER AT BURBANK, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

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                         IDENTIFICATION OF PHYTOPLANKTON

                                1.900 CELLS/ML

JUNE 14, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML    PER_CENT
  0955 HOURS
                CHLOROPHYTA                    GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...SCENEDESMACEAE
                ....SCENEDESMUS                                       ____79         _4
                                                           TOTALS       79            4      0.000=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE             DIATOMS
                ..CENTRALES                    CENTRIC
                ...COSCINODISCACEAE
              D ....CYCLOTELLA                                         430           22
              D ....MELOSIRA                                           670           35
                ..PENNALES                     PENNATE
                ...ACHNANTHACEAE
                ....COCCONEIS                                           39            2
                ....RHOICOSPHENIA                                       20            1
                ...DIATOMACEAE
              L ....DIATOMA                                                           0
                ...FRAGILARIACEAE
                ....ASTERIONELLA                                        20            1
              D ....FRAGILARIA                                         310           16
                ....SYNEDRA                                             20            1
                ...GOMPHONEMATACEAE
                ....GOMPHONEMA                                          39            2
                ...NAVICULACEAE                NAVICULOID
                ....NAVICULA                                            79            4
                ...NITZSCHIACEAE
                ....HANTZSCHIA                                          20            1
                ....NITZSCHIA                                        ___200          _10
                                                           TOTALS     1.800          95      2.509=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                     PHYL/DIV 0.246
                                        CLASS 0.246
                                        ORDER 1.180
                                       FAMILY 1.910
                                       GENERA 2.652
                 SAMPLING METHOD - EDI


                                6.500 CELLS/ML

JULY 13, 1976  _ORGANISM__NAME______________  _COMMON__NAME______  CELLS/ML    PER_CENT
  1200 HOURS
                CHLOROPHYTA                    GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...MICRACTINIACEAE
                ....MICRACTINIUM                                       480            7
                ...SCENEDESMACEAE
                ....SCENEDESMUS                                        300            5
                ..VOLVOCALES
                ...CHLAMYDOMONADACEAE
              L ....CHLAMYDOMONAS                                     ______         _0
                                                           TOTALS      770           12      0.961=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE             DIATOMS
                ..CENTRALES                    CENTRIC
                ...COSCINODISCACEAE
                ....CYCLOTELLA                                         890           14
              D ....MELOSIRA                                         4.600           70
                ..PENNALES                     PENNATE
                ...CYMBELLACEAE
                ....CYMBELLA                                           120            2
                ...NITZSCHIACEAE
                ....NITZSCHIA                                        ___120          _2
                                                           TOTALS     5.700          88      0.906=DIVERSITY

                PYRRHOPHYTA                    FIRE ALGAE
                .DINOPHYCEAE                   DINOFLAGELLATES
                ..GYMNODINIALES
                ...GYMNODINIACEAE
                ....GYMNODINIUM                                       ____59         _1
                                                           TOTALS       59            1      0.000=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                     PHYL/DIV 0.597
                                        CLASS 0.597
                                        ORDER 0.815
                                       FAMILY 0.965
                                       GENERA 1.502
                 SAMPLING METHOD - EDI
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13353200 SNAKE RIVER AT BURBANK, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

```
                                   IDENTIFICATION OF PHYTOPLANKTON

                                          1,100 CELLS/ML

AUG. 23, 1976  _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML       PER_CENT
  1010 HOURS
                CHLOROPHYTA                      GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
                ....ANKISTRODESMUS                                     ____53           _5
                                                          TOTALS          53             5          0.000=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE               DIATOMS
                ..CENTRALES                      CENTRIC
                ...COSCINODISCACEAE
              D ....CYCLOTELLA                                           160            15
              D ....MELOSIRA                                             800            75
                ..PENNALES                       PENNATE
                ...FRAGILARIACEAE
              L ....FRAGILARIA                                                           0
                ...NAVICULACEAE                  NAVICULOID
              L ....NAVICULA                                                             0
                ...NITZSCHIACEAE
                ....NITZSCHIA                                          ____53           _5
                                                          TOTALS       1,000            95          0.913=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    L - LESS THEN 15: MAY NOT HAVE BEEN ACTUALLY COUNTED
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                     PHYL/DIV 0.286
                                        CLASS 0.286
                                        ORDER 0.569
                                       FAMILY 0.569
                                       GENERA 1.154
                    SAMPLING METHOD - EDI


                                          1,500 CELLS/ML

SEPT. 20, 1976  _ORGANISM__NAME______________   _COMMON__NAME______  CELLS/ML       PER_CENT
  1100 HOURS
                CHLOROPHYTA                      GREEN ALGAE
                .CHLOROPHYCEAE
                ..CHLOROCOCCALES
                ...OOCYSTACEAE
                ....ANKISTRODESMUS                                        76             5
                ..VOLVOCALES
                ...CHLAMYDOMONADACEAE
                ....CHLAMYDOMONAS                                      ____19           _1
                                                          TOTALS          95             6          0.722=DIVERSITY

                CHRYSOPHYTA
                .BACILLARIOPHYCEAE               DIATOMS
                ..CENTRALES                      CENTRIC
                ...COSCINODISCACEAE
              D ....CYCLOTELLA                                           310            20
              D ....MELOSIRA                                             750            49
                ..PENNALES                       PENNATE
                ...FRAGILARIACEAE
                ....ASTERIONELLA                                          57             4
                ....FRAGILARIA                                           190            13
                ...NAVICULACEAE                  NAVICULOID
                ....NAVICULA                                              38             3
                ...NITZSCHIACEAE
                ....NITZSCHIA                                             19             1
                ...SURIRELLACEAE
                ....SURIRELLA                                          ____19           _1
                                                          TOTALS       1,400            91          1.863=DIVERSITY

                EUGLENOPHYTA                     EUGLENOIDS
                .CRYPTOPHYCEAE                   CRYPTOMONADS
                ..CRYPTOMONIDALES
                ...CRYPTOCHRYSIDACEAE
                ....CHROOMONAS                                         ____38           _3
                                                          TOTALS          38             3          0.000=DIVERSITY

              NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
                    ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
                    DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
                                     PHYL/DIV 0.508
                                        CLASS 0.508
                                        ORDER 1.273
                                       FAMILY 1.518
                                       GENERA 2.252
                    SAMPLING METHOD - EDI
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13353200 SNAKE RIVER AT BURBANK, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	233	223	229	311	306	309	257	253	256	222	211	216
2	239	227	234	306	301	304	257	256	256	228	221	224
3	245	233	239	301	295	298	257	252	255	233	229	232
4	248	238	242	294	291	292	252	243	247	243	232	237
5	249	241	246	291	289	290	243	241	242	246	242	245
6	250	243	247	289	288	288	249	243	246	---	---	---
7	251	249	250	289	287	288	249	248	249	243	241	242
8	254	249	252	288	286	287	250	247	248	242	241	242
9	257	252	256	287	285	287	270	251	260	242	240	242
10	259	254	258	285	281	283	290	270	281	---	---	---
11	263	259	260	280	271	275	295	289	293	---	---	---
12	262	261	261	270	262	266	289	254	272	---	---	---
13	263	261	261	260	254	258	254	203	225	---	---	---
14	263	261	262	254	252	253	203	189	194	---	---	---
15	263	258	260	253	248	250	192	189	190	---	---	---
16	260	256	259	248	247	247	195	191	194	---	---	---
17	259	254	257	247	245	247	198	196	197	---	---	---
18	258	255	256	249	246	248	197	192	196	---	---	---
19	265	254	259	250	248	249	197	190	192	---	---	---
20	262	255	260	250	249	250	191	188	189	---	---	---
21	265	258	263	251	250	250	---	---	---	233	232	232
22	271	264	267	253	250	252	---	---	---	233	232	232
23	278	271	274	255	253	254	203	198	200	239	234	237
24	288	278	283	255	253	254	206	203	204	242	239	240
25	299	288	293	252	251	252	208	206	207	244	241	242
26	309	299	303	252	250	251	---	---	---	244	241	243
27	317	309	313	252	250	251	199	191	197	241	231	237
28	319	315	317	252	250	251	190	186	188	231	219	225
29	321	319	320	253	251	252	191	186	188	221	212	216
30	320	316	318	255	253	254	202	191	196	212	207	210
31	315	311	314	---	---	---	211	191	207	207	206	206
MONTH	321	223	268	311	245	266	295	186	224	---	---	---

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	253	206	206	254	250	252	---	---	---	194	186	190
2	212	207	209	251	249	250	---	---	---	195	187	190
3	219	212	216	250	248	249	---	---	---	195	186	191
4	227	219	223	250	248	249	---	---	---	194	186	190
5	235	227	231	251	248	250	---	---	---	199	189	193
6	239	235	237	254	251	252	---	---	---	197	184	193
7	245	240	242	257	254	256	---	---	---	192	176	185
8	248	243	246	259	257	258	---	---	---	180	164	172
9	250	247	249	260	257	258	---	---	---	168	155	162
10	255	251	253	259	255	257	---	---	---	154	142	148
11	258	254	256	255	250	253	---	---	---	144	137	139
12	261	257	259	251	246	249	---	---	---	137	134	135
13	265	261	263	247	245	246	---	---	---	---	---	---
14	266	263	265	247	245	246	---	---	---	127	117	122
15	267	265	266	---	---	---	---	---	---	117	106	112
16	269	266	268	253	249	250	---	---	---	106	100	103
17	271	269	270	252	249	250	---	---	---	101	100	101
18	271	269	271	253	250	251	---	---	---	104	101	102
19	275	271	273	253	252	253	---	---	---	101	95	98
20	277	275	276	253	252	252	---	---	---	95	93	94
21	279	276	277	254	252	252	162	149	155	96	94	95
22	276	271	274	254	252	252	162	160	162	96	95	96
23	272	269	271	252	248	250	169	159	164	96	94	95
24	269	266	268	246	242	245	175	165	171	94	93	93
25	266	262	265	242	238	240	184	174	178	93	92	93
26	264	258	261	238	234	236	190	181	185	93	92	93
27	260	256	258	---	---	---	194	188	191	94	93	93
28	257	254	255	---	---	---	195	188	191	94	93	93
29	255	253	254	---	---	---	192	184	188	93	92	93
30	---	---	---	---	---	---	192	184	187	92	90	91
31	---	---	---	---	---	---	---	---	---	90	90	90
MONTH	279	206	254	260	234	250	---	---	---	199	90	128

13353200 SNAKE RIVER AT BURBANK, WA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	92	91	91	97	96	96	105	102	103	189	181	185
2	92	91	92	95	94	95	104	103	103	193	186	190
3	91	90	91	95	94	94	106	103	104	196	188	192
4	93	91	92	94	94	94	107	104	105	198	192	196
5	97	93	95	96	94	95	109	107	108	202	191	196
6	100	97	99	98	96	97	113	109	111	202	194	199
7	102	100	101	102	98	101	115	112	114	205	196	201
8	102	101	102	107	103	105	119	114	116	206	199	202
9	104	102	103	109	107	108	124	117	122	207	198	203
10	107	104	105	111	109	110	130	124	126	208	199	204
11	112	107	109	112	110	111	134	129	131	210	200	205
12	119	112	116	111	108	109	137	131	134	209	202	206
13	120	117	119	109	107	108	139	132	136	210	202	206
14	117	112	115	107	103	105	142	137	139	212	203	207
15	112	105	109	102	99	101	144	139	142	215	205	210
16	104	99	101	100	97	98	147	141	144	221	207	213
17	98	95	97	98	96	97	150	144	147	226	216	220
18	95	90	93	97	95	96	152	146	149	230	220	226
19	90	89	89	94	93	94	153	149	151	235	224	229
20	92	89	91	94	92	93	154	150	152	235	220	230
21	95	92	93	94	92	93	157	150	154	236	233	234
22	102	96	100	94	92	92	160	151	156	238	236	237
23	103	102	103	94	92	93	165	155	159	239	238	239
24	102	99	100	95	93	94	167	158	163	242	240	241
25	102	99	101	96	94	95	168	160	164	245	241	243
26	104	103	103	97	95	96	172	161	167	246	242	243
27	105	104	105	99	96	97	172	163	167	244	240	242
28	104	102	103	99	98	99	174	164	169	243	238	240
29	101	98	100	100	99	100	179	169	175	241	237	239
30	99	97	98	103	100	101	186	173	180	240	236	238
31	---	---	---	104	101	103	188	180	184	---	---	---
MONTH	120	89	101	112	92	99	188	102	141	246	181	217
YEAR	321	89	195									

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	19.0	18.5	18.5	13.0	12.5	12.5	7.0	6.5	7.0	4.0	3.5	4.0
2	19.0	18.5	18.5	12.5	12.5	12.5	7.0	6.5	6.5	3.5	3.5	3.5
3	18.5	18.5	18.5	13.0	12.5	12.5	6.5	6.5	6.5	3.5	3.5	3.5
4	18.5	18.0	18.5	12.5	12.5	12.5	7.0	6.5	6.5	3.5	3.5	3.5
5	18.5	18.0	18.0	12.5	12.0	12.5	6.5	6.0	6.5	3.5	3.5	3.5
6	18.0	17.5	18.0	12.0	12.0	12.0	6.0	6.0	6.0	---	---	---
7	18.0	17.5	18.0	12.0	11.5	12.0	6.0	6.0	6.0	4.0	3.5	4.0
8	18.0	17.5	17.5	11.5	11.0	11.5	6.0	6.0	6.0	4.0	3.5	3.5
9	17.5	17.5	17.5	11.0	11.0	11.0	6.0	6.0	6.0	4.0	3.5	4.0
10	17.5	17.0	17.5	11.0	10.5	10.5	6.0	5.5	6.0	---	---	---
11	17.0	16.5	17.0	10.5	10.0	10.5	5.5	5.5	5.5	---	---	---
12	17.0	16.5	17.0	10.0	9.5	10.0	---	---	---	---	---	---
13	17.0	16.5	16.5	10.0	9.5	9.5	---	---	---	---	---	---
14	16.5	16.0	16.5	9.5	9.5	9.5	---	---	---	---	---	---
15	16.5	16.0	16.5	9.5	9.5	9.5	---	---	---	---	---	---
16	16.5	16.0	16.0	9.5	9.0	9.0	---	---	---	---	---	---
17	16.5	16.0	16.0	9.0	9.0	9.0	5.0	4.5	4.5	---	---	---
18	16.0	15.5	16.0	9.0	8.5	8.5	4.5	4.5	4.5	---	---	---
19	16.0	15.5	15.5	8.5	8.0	8.5	4.5	4.5	4.5	---	---	---
20	15.5	15.5	15.5	8.0	8.0	8.0	4.5	4.5	4.5	---	---	---
21	15.5	15.0	15.0	8.0	7.5	8.0	---	---	---	3.5	3.5	3.5
22	15.0	14.5	15.0	8.0	7.5	7.5	---	---	---	3.5	3.5	3.5
23	15.0	14.5	14.5	8.0	8.0	8.0	4.5	4.5	4.5	3.5	3.5	3.5
24	14.5	14.0	14.5	8.0	8.0	8.0	4.5	4.5	4.5	3.5	3.5	3.5
25	14.0	13.5	14.0	8.0	8.0	8.0	4.5	4.5	4.5	3.5	3.5	3.5
26	14.0	13.5	13.5	8.0	8.0	8.0	---	---	---	3.5	3.5	3.5
27	14.0	13.5	13.5	8.0	7.5	8.0	4.5	4.5	4.5	3.5	3.5	3.5
28	13.5	13.0	13.5	7.5	7.5	7.5	4.5	4.5	4.5	3.5	3.5	3.5
29	13.5	13.0	13.5	7.5	7.0	7.5	4.5	4.0	4.5	3.5	3.5	3.5
30	13.0	13.0	13.0	7.0	6.5	7.0	4.0	4.0	4.0	3.5	3.5	3.5
31	13.0	12.5	13.0	---	---	---	4.0	4.0	4.0	3.5	3.5	3.5
MONTH	19.0	12.5	16.0	13.0	6.5	9.5	---	---	---	---	---	---

13353200 SNAKE RIVER AT BURBANK, WA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3.5	3.5	3.5	4.5	4.0	4.0	---	---	---	11.0	10.5	11.0
2	3.5	3.0	3.5	4.5	4.0	4.0	---	---	---	11.5	11.0	11.0
3	3.0	3.0	3.0	4.0	3.5	4.0	---	---	---	11.0	11.0	11.0
4	3.0	2.5	2.5	4.0	3.5	4.0	---	---	---	11.0	11.0	11.0
5	2.5	2.0	2.5	4.0	3.5	4.0	---	---	---	11.0	10.5	11.0
6	2.5	2.0	2.0	4.0	3.5	3.5	---	---	---	11.5	11.0	11.0
7	2.5	2.0	2.0	4.0	3.5	3.5	---	---	---	12.0	11.5	11.5
8	2.5	2.0	2.5	4.0	3.5	4.0	---	---	---	12.5	12.0	12.0
9	2.5	2.5	2.5	4.5	4.0	4.0	---	---	---	12.0	12.0	12.0
10	2.5	2.5	2.5	4.5	4.0	4.0	---	---	---	12.0	11.5	12.0
11	2.5	2.5	2.5	4.5	4.0	4.0	---	---	---	11.5	11.0	11.5
12	3.0	2.5	3.0	4.5	4.0	4.0	---	---	---	11.5	11.5	11.5
13	3.0	3.0	3.0	4.5	4.0	4.0	---	---	---	12.5	11.5	12.0
14	3.0	3.0	3.0	4.5	4.0	4.5	---	---	---	12.0	11.5	12.0
15	3.0	3.0	3.0	---	---	---	---	---	---	11.5	11.5	11.5
16	3.5	3.0	3.0	4.5	4.5	4.5	---	---	---	11.5	11.0	11.0
17	3.5	3.5	3.5	5.0	4.5	4.5	---	---	---	11.5	11.0	11.0
18	3.5	3.0	3.0	4.5	4.5	4.5	---	---	---	12.0	11.0	11.5
19	3.0	3.0	3.0	5.0	4.5	4.5	---	---	---	12.0	11.5	12.0
20	3.0	3.0	3.0	5.0	4.5	4.5	---	---	---	11.5	11.0	11.5
21	3.0	3.0	3.0	5.5	4.5	5.0	9.5	9.0	9.5	11.5	11.0	11.5
22	3.5	3.0	3.0	5.5	5.0	5.0	10.0	9.5	9.5	12.0	11.5	11.5
23	3.5	3.0	3.5	5.5	5.0	5.5	9.5	9.5	9.5	12.0	11.5	12.0
24	3.5	3.5	3.5	6.0	5.5	5.5	9.5	9.5	9.5	12.0	11.5	12.0
25	4.0	3.5	3.5	6.0	5.5	5.5	10.0	9.5	9.5	12.0	11.5	12.0
26	4.0	3.5	4.0	6.0	5.5	6.0	10.0	9.5	9.5	12.5	12.0	12.0
27	4.0	4.0	4.0	---	---	---	10.0	10.0	10.0	12.5	12.0	12.5
28	4.0	4.0	4.0	---	---	---	10.5	10.0	10.0	12.5	12.5	12.5
29	4.5	4.0	4.0	---	---	---	10.5	10.0	10.0	12.5	12.0	12.5
30	---	---	---	---	---	---	10.5	10.5	10.5	12.5	12.0	12.5
31	---	---	---	---	---	---	---	---	---	12.5	12.0	12.0
MONTH	4.5	2.0	3.0	6.0	3.5	4.5	---	---	---	12.5	10.5	11.5

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.5	12.0	12.0	15.5	15.0	15.0	21.0	20.5	20.5	21.5	21.0	21.5
2	12.5	12.0	12.5	15.5	15.0	15.5	21.5	20.5	21.0	21.5	20.5	21.0
3	12.5	12.0	12.0	16.0	15.0	15.5	21.5	20.5	21.0	22.0	20.5	21.0
4	12.0	12.0	12.0	16.0	15.0	15.5	21.5	21.0	21.0	22.0	21.0	21.5
5	12.5	12.0	12.0	16.0	15.5	15.5	21.5	20.5	21.0	21.5	21.0	21.0
6	12.5	12.0	12.0	16.0	15.5	16.0	21.5	21.0	21.0	21.0	20.5	20.5
7	12.5	12.0	12.5	16.5	16.0	16.0	21.5	20.5	21.0	21.5	20.5	21.0
8	13.0	12.5	12.5	17.0	16.0	16.5	21.5	21.0	21.0	21.0	20.0	20.5
9	13.0	12.5	13.0	17.0	16.5	16.5	21.5	21.0	21.0	21.0	19.5	20.5
10	13.5	13.0	13.5	17.5	16.5	17.0	21.5	20.5	21.0	21.0	19.5	20.0
11	14.0	13.5	13.5	18.0	17.0	17.5	21.5	21.0	21.5	21.0	19.5	20.0
12	14.0	13.5	14.0	18.5	17.5	18.0	22.0	21.0	21.5	20.5	19.0	19.5
13	14.5	14.0	14.0	18.5	17.5	18.0	21.5	21.0	21.5	20.0	19.0	19.5
14	14.5	14.0	14.0	18.5	18.0	18.5	22.0	21.0	21.5	20.0	19.5	19.5
15	14.0	14.0	14.0	19.0	18.0	18.5	22.0	21.0	21.5	20.5	19.0	19.5
16	14.0	14.0	14.0	19.0	18.0	18.5	21.5	20.5	21.0	20.0	19.5	19.5
17	14.0	13.5	14.0	19.5	18.5	19.0	21.5	20.5	21.0	20.0	19.0	19.5
18	14.0	13.5	13.5	19.0	18.5	19.0	21.5	20.5	21.0	20.0	19.0	19.5
19	14.0	13.5	13.5	19.5	18.5	19.0	21.0	20.5	20.5	20.0	19.0	19.5
20	13.5	13.5	13.5	19.5	19.0	19.0	21.5	20.5	21.0	20.0	19.5	19.5
21	13.5	13.0	13.5	19.5	19.0	19.0	21.5	20.5	21.0	19.5	19.0	19.0
22	13.5	13.5	13.5	19.5	19.0	19.0	21.5	20.5	21.0	19.5	19.0	19.0
23	14.0	13.5	13.5	20.0	19.0	19.5	21.5	20.5	21.0	19.5	19.0	19.0
24	14.5	13.5	14.0	20.0	19.5	19.5	22.0	20.5	21.0	19.5	19.0	19.0
25	14.5	14.0	14.5	20.5	19.5	20.0	21.5	20.5	21.0	19.5	19.0	19.0
26	15.0	14.5	14.5	20.5	20.0	20.0	21.5	20.5	21.0	19.5	19.0	19.0
27	15.5	14.5	15.0	20.5	19.5	20.0	21.5	20.5	21.0	19.5	19.0	19.0
28	15.5	15.0	15.5	21.0	20.0	20.5	21.5	20.5	21.0	19.5	19.0	19.0
29	16.0	15.0	15.5	20.5	20.0	20.5	21.5	20.5	21.0	19.5	19.0	19.5
30	16.0	15.0	15.5	21.0	20.5	21.0	21.5	20.5	21.0	19.5	19.0	19.5
31	---	---	---	21.5	20.5	21.0	21.5	20.5	21.0	---	---	---
MONTH	16.0	12.0	13.5	21.5	15.0	18.0	22.0	20.5	21.0	22.0	19.0	20.0
YEAR	22.0	2.0	12.0									

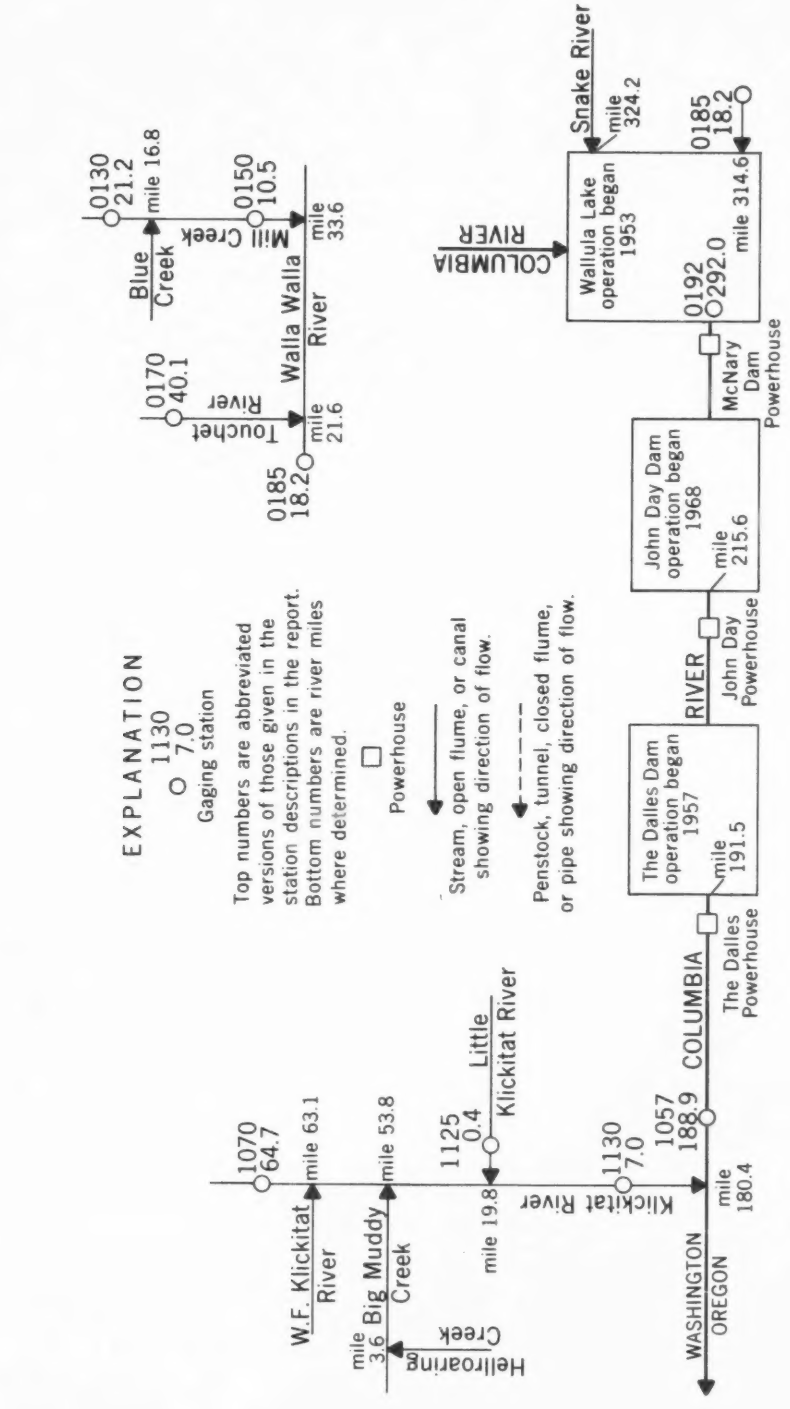
EXPLANATION
1130
7.0
Gaging station
Top numbers are abbreviated versions of those given in the station descriptions in the report. Bottom numbers are river miles where determined.
Powerhouse
Stream, open flume, or canal showing direction of flow.
Penstock, tunnel, closed flume, or pipe showing direction of flow.
0130
21.2
Blue Creek
mile 16.8
0150
10.5
Mill Creek
mile 33.6
0170
40.1
Touchet River
mile 21.6
0185
18.2
Walla Walla River
Snake River
mile 324.2
COLUMBIA RIVER
Wallula Lake operation began 1953
0192
292.0
mile 314.6
0185
18.2
McNary Dam Powerhouse
John Day Dam operation began 1968
mile 215.6
John Day Powerhouse
RIVER
The Dalles Dam operation began 1957
mile 191.5
The Dalles Powerhouse
COLUMBIA
1057
188.9
mile 180.4
1130
7.0
Klickitat River
1125
0.4
Little Klickitat River
mile 19.8
1070
64.7
mile 63.1
W.F. Klickitat River
mile 53.8
Big Muddy Creek
mile 3.6
Hellroaring Creek
WASHINGTON
OREGON

Figure 17. Gaging stations in Columbia River basin between Wallula Lake and Klickitat River.

14013000 MILL CREEK NEAR WALLA WALLA, WA

LOCATION.--Lat 46°00'29", long 118°07'23", in SW¼SW¼ sec.7, T.6 N., R.38 E., Walla Walla County, Hydrologic Unit 17070102, on left bank, 0.1 mi (0.2 km) downstream from Railroad Canyon, 4.0 mi (6.4 km) downstream from city of Walla Walla diversion dam, 4.4 mi (7.1 km) upstream from Blue Creek, 11.5 mi (18.5 km) southeast of Walla Walla, and at mile 21.2 (34.1 km).

DRAINAGE AREA.--59.6 mi² (154.4 km²).

PERIOD OF RECORD.--August 1913 to September 1917, April to September 1938, October 1939 to September 1976 (discontinued). Water temperatures March 1962 to July 1965, sediment records March 1962 to July 1965.

REVISED RECORDS.--WSP 1398: 1946-48(M), 1950 (M). WSP 1935: 1959, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,995.85 ft (608.335 m) above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1938, nonrecording gages at about same site at different datums.

REMARKS.--Records good. No regulation. City of Walla Walla diverts about 22 ft³/s (0.62 m³/s) 4.0 mi (6.4 km) above station for municipal use.

COOPERATION.--Gage-height record and 12 discharge measurements furnished by Corps of Engineers.

AVERAGE DISCHARGE.--41 years (water years 1914-17, 1940-76), 99.5 ft³/s (2.818 m³/s), 72,090 acre-ft/yr (88.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,240 ft³/s (91.8 m³/s) Dec. 23, 1964, gage height, 19.26 ft (5.870 m); minimum daily, 9.5 ft³/s (0.27 m³/s) Dec. 9, 10, 1972.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 700 ft³/s (19.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 1	1930	1,690	47.9	17.59	5.361	Jan. 16	2315	744	21.1	16.27	4.960
Dec. 7	1730	*1,980	56.1	*17.92	5.462						

Minimum discharge, 42 ft³/s (1.19 m³/s) part of each day Oct. 1, 2, Aug. 30 to Sept 5; minimum gage height, 14.30 ft (4.359 m) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	65	868	168	151	187	262	243	101	66	50	44
2	44	63	888	136	143	156	225	279	93	63	48	44
3	44	65	550	120	136	138	207	249	89	61	48	44
4	53	61	468	134	125	127	216	219	85	59	47	44
5	46	59	394	204	110	118	269	210	83	58	47	44
6	46	63	319	201	105	114	341	193	83	58	48	45
7	56	70	1230	171	103	112	312	201	85	58	50	45
8	50	66	1040	234	99	112	341	231	95	58	48	44
9	47	63	617	262	97	114	407	246	95	56	45	45
10	48	66	424	225	93	127	369	256	101	55	47	45
11	50	63	319	219	89	141	357	234	93	55	45	45
12	51	63	249	199	123	134	319	187	93	58	47	45
13	50	65	204	161	134	131	273	193	95	55	50	45
14	48	70	163	196	174	131	240	196	87	53	56	45
15	48	108	151	491	182	129	266	161	87	51	58	45
16	48	105	141	698	304	129	237	158	114	51	56	45
17	48	89	134	655	330	148	222	168	136	50	50	44
18	48	81	127	550	293	259	225	148	120	51	48	44
19	50	77	123	419	246	323	213	141	112	50	47	45
20	51	75	118	319	190	266	473	136	103	50	47	45
21	81	72	116	252	161	210	482	123	97	50	45	45
22	74	72	112	210	146	199	357	123	89	48	45	47
23	61	83	108	182	141	196	279	125	85	48	45	45
24	58	116	116	163	138	219	252	116	81	47	44	45
25	63	141	123	146	143	219	234	112	79	48	48	45
26	75	225	377	134	158	196	204	105	74	48	48	45
27	72	256	482	134	201	174	179	114	70	47	47	45
28	66	182	338	143	266	166	163	110	68	47	45	45
29	63	138	266	171	225	151	168	99	68	47	45	47
30	68	146	252	174	---	176	196	101	66	47	45	47
31	68	---	216	163	---	259	---	108	---	45	44	---
TOTAL	1719	2868	11033	7634	4806	5261	8288	5285	2727	1638	1483	1348
MEAN	55.5	95.6	356	246	166	170	276	170	90.9	52.8	47.8	44.9
MAX	81	256	1230	698	330	323	482	279	136	66	58	47
MIN	44	59	108	120	89	112	163	99	66	45	44	44
AC-FT	3410	5690	21880	15140	9530	10440	16440	10480	5410	3250	2940	2670

CAL YR 1975 TOTAL 54961 MEAN 151 MAX 1270 MIN 42 AC-FT 109000
WTR YR 1976 TOTAL 54090 MEAN 148 MAX 1230 MIN 44 AC-FT 107300

14015000 MILL CREEK AT WALLA WALLA, WA

LOCATION.--Lat 46°04'35", long 118°16'21", in NE¼NW¼ sec.23, T.7 N., R.36 E., Walla Walla County, Hydrologic Unit 17070102, on left bank, 200 ft (61 m) downstream from diversion dam, 1.5 mi (2.4 km) east of Walla Walla, and at mile 10.5 (16.9 km).

DRAINAGE AREA.--95.7 mi² (247.9 km²).

PERIOD OF RECORD.--April 1941 to current year.

REVISED RECORDS.--WSP 1288: Drainage area. WSP 1348: 1943, 1945-46.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,165.49 ft (355.241 m) above mean sea level (Corps of Engineers bench mark). April 1941 to June 11, 1941, nonrecording gage and June 11, 1941, to Jan. 22, 1957, water-stage recorder, at sites 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records good. Some regulation at diversion dam 200 ft (61 m) upstream from station where water is diverted into Yellowhawk and Garrison Creeks for stock and irrigation. Since Nov. 19, 1941, water has been diverted 1.0 mi (1.6 km) upstream into Mill Creek Reservoir for flood control with release of stored water after flood into Russell Creek, and is also diverted as required to replenish losses from seepage and evaporation from small recreation pool maintained in the reservoir. City of Walla Walla diverts water for municipal supply about 11 mi (18 km) upstream. Other small diversions above station for irrigation.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by the Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,760 ft³/s (78.2 m³/s) Dec. 28, 1956, gage height, 4.0 ft (1.22 m), site and datum then in use; no flow on all or part of some days in 1954, 1958, 1961-63, 1968-69, 1972-76.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s (42.5 m³/s) Dec. 7, gage height, 4.55 ft (1.387 m); no flow July 9, 11-14, 17, 18, 20-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.31	7.4	635	202	160	269	373	202	69	1.4	1.4	1.0
2	.31	7.4	801	170	144	214	308	231	55	.19	1.4	.94
3	.19	7.4	494	156	136	190	269	210	49	.10	1.4	1.0
4	.19	6.5	408	186	120	167	254	190	45	.03	1.4	1.1
5	.19	6.5	356	329	106	139	278	206	38	.01	1.8	1.1
6	.10	6.5	308	319	105	108	379	190	37	.06	1.4	1.1
7	2.3	11	856	276	103	102	362	186	38	.06	1.4	1.0
8	2.8	19	1130	405	98	99	398	210	29	.06	1.4	1.0
9	1.8	19	704	420	84	99	514	214	25	0	1.4	.97
10	1.8	15	456	340	75	111	432	236	38	.06	1.2	.89
11	1.8	3.4	340	338	73	132	414	245	51	0	1.2	.83
12	1.4	2.3	264	303	111	123	362	182	55	0	1.8	.83
13	1.4	1.4	221	263	139	123	303	170	55	0	1.8	.86
14	2.3	1.1	180	331	178	129	245	178	51	0	4.1	.85
15	2.8	4.8	172	842	194	123	298	149	35	2.8	12	.85
16	2.3	1.1	163	1080	432	123	254	132	31	.06	13	.85
17	2.3	.65	141	988	481	132	231	132	64	0	5.2	.85
18	1.8	.65	126	791	408	288	231	108	57	0	.97	1.0
19	1.8	1.8	116	562	340	426	214	86	53	.06	.97	1.4
20	1.4	1.4	108	398	264	356	562	86	47	0	.87	1.3
21	1.4	2.3	102	296	214	273	657	69	43	0	.86	1.1
22	1.1	3.4	96	229	178	254	469	66	37	0	.70	1.1
23	1.1	3.4	86	183	178	250	356	73	27	0	.65	1.0
24	1.1	6.5	91	172	152	283	298	69	16	0	.68	1.0
25	.86	23	99	161	159	283	264	51	16	0	.56	1.1
26	.65	119	373	159	190	259	231	40	17	1.1	2.0	1.2
27	7.4	313	576	142	236	227	210	37	6.5	1.8	2.5	1.1
28	15	189	396	149	345	223	186	38	2.3	1.8	2.0	.97
29	11	131	298	179	319	194	182	33	2.3	2.3	1.9	.87
30	4.8	128	293	185	---	227	198	45	2.8	1.8	1.6	.86
31	7.4	---	250	171	---	362	---	76	---	1.4	1.2	---
TOTAL	81.10	1042.90	10639	10725	5722	6288	9732	4140	1091.9	15.09	70.76	30.02
MEAN	2.62	34.8	343	346	197	203	324	134	36.4	.49	2.28	1.00
MAX	15	313	1130	1080	481	426	657	245	69	2.8	13	1.4
MIN	.10	.65	86	142	73	99	182	33	2.3	0	.56	.83
AC-FT	161	2070	21100	21270	11350	12470	19300	8210	2170	30	140	60

CAL YR 1975 TOTAL 43847.46 MEAN 120 MAX 1140 MIN 0 AC-FT 86970
WTR YR 1976 TOTAL 49577.77 MEAN 135 MAX 1130 MIN 0 AC-FT 98340

14017000 TOUCHET RIVER AT BOLLES, WA

LOCATION.--Lat 46°16'28", long 118°13'13", on line between secs.7 and 8, T.9 N., R.37 E., Walla Walla County, Hydrologic Unit 17070102, on right bank just downstream from bridge on State Highway 124, 0.4 mi (0.6 km) southeast of Bolles, 2.9 mi (4.7 km) downstream from Coppei Creek, and at mile 40.1 (64.5 km).

DRAINAGE AREA.--361 mi^2 (935 km^2).

PERIOD OF RECORD.--February 1924 to October 1929, April 1951 to current year. Monthly discharge only for February and March 1929, published in WSP 1318. Chemical analyses October 1973 to September 1975, sediment records July 1962 to September 1965 (partial-record station).

REVISED RECORDS.--WSP 1448: 1952-53(M). WSP 1935: Drainage area.

GAGE.--Nonrecording gage. Altitude of gage is 1,150 ft (351 m), from topographic map. Prior to Oct. 5, 1929, water-stage recorder at site 0.5 mi (0.8 km) upstream at different datum. Apr. 1 to May 6, 1951, nonrecording gage, and May 7, 1951, to Sept. 30, 1968, water-stage recorder and wire-weight gage at present site and datum.

REMARKS.--Records good. Diurnal fluctuation and some regulation at low flow caused by operation of flour mill at Waitsburg 3 mi (5 km) upstream. Numerous small diversions for municipal and domestic use and for irrigation.

AVERAGE DISCHARGE.--30 years (water years 1925-29, 1952-76), 239 ft^3/s (6.768 m^3/s), 173,200 acre-ft/yr (214 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,350 ft^3/s (265 m^3/s) Dec. 23, 1964, gage height, 14.06 ft (4.285 m), from rating curve extended above 3,800 ft^3/s (108 m^3/s) on basis of slope-area measurement of peak flow; minimum, 1.4 ft^3/s (0.040 m^3/s) July 30, 1926, gage height, 0.42 ft (0.128 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 1	2130	2,400	68.0	6.71	2.045	Jan. 15	2015	2,050	58.1	6.26	1.908
Dec. 7	1800	*3,980	113	*8.55	2.606	Feb. 16	1130	1,810	51.3	5.96	1.817

Minimum discharge, 40 ft^3/s (1.13 m^3/s) Oct. 3, gage height, 2.43 ft (0.741 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	98	1170	416	305	588	654	506	264	113	62	58
2	46	92	1510	385	296	493	624	564	242	110	69	57
3	43	94	960	365	287	427	600	582	211	105	88	57
4	60	92	996	636	215	360	606	554	195	100	69	57
5	72	86	942	894	150	325	660	576	183	100	60	57
6	69	84	727	744	150	315	804	493	175	92	62	58
7	96	114	1990	636	150	300	798	476	175	92	71	60
8	80	107	1990	1000	160	291	842	466	224	102	80	58
9	69	107	1200	920	170	305	1050	537	269	100	69	57
10	70	114	849	732	170	394	933	564	233	92	60	55
11	70	114	684	786	179	422	868	612	224	87	55	57
12	70	109	564	672	335	355	804	520	207	90	53	57
13	70	107	487	570	330	350	720	476	219	90	57	58
14	72	109	395	804	416	345	630	482	199	83	90	57
15	69	185	375	1710	395	320	774	438	179	80	105	60
16	65	248	345	1570	1070	330	630	395	191	76	92	60
17	63	200	310	1420	1090	395	582	385	260	78	78	58
18	61	177	287	1220	933	730	570	345	219	76	80	60
19	65	154	269	979	756	720	526	320	183	80	73	58
20	69	149	246	774	714	642	862	325	183	73	76	57
21	116	146	233	630	537	588	894	287	199	73	73	57
22	144	138	219	543	487	630	823	278	183	71	69	57
23	90	146	207	504	454	636	714	287	164	69	69	58
24	86	165	246	443	427	834	666	278	150	67	62	57
25	103	262	296	390	438	696	630	269	140	69	71	57
26	131	336	744	350	493	636	576	251	137	67	80	57
27	112	492	855	340	648	570	526	251	128	60	69	57
28	105	398	642	340	780	582	493	273	116	60	64	53
29	94	336	553	340	666	504	476	242	107	58	64	57
30	92	348	660	340	---	537	476	237	110	60	62	57
31	103	---	520	320	---	672	---	260	---	57	58	---
TOTAL	2501	5307	21471	21773	13201	15292	20811	12529	5669	2530	2190	1723
MEAN	80.7	177	693	702	455	493	694	404	189	81.6	70.6	57.4
MAX	144	492	1990	1710	1090	834	1050	612	269	113	105	60
MIN	43	84	207	320	150	291	476	237	107	57	53	53
AC-FT	4960	10530	42590	43190	26180	30330	41280	24850	11240	5020	4340	3420

CAL YR 1975 TOTAL 126365 MEAN 346 MAX 2400 MIN 37 AC-FT 250600
WTR YR 1976 TOTAL 124997 MEAN 342 MAX 1990 MIN 43 AC-FT 247900

14018500 WALLA WALLA RIVER NEAR TOUCHET, WA

LOCATION.--Lat 46°01'40", long 118°43'43", in NW¼SE¼ sec.6, T.6 N., R.33 E., Walla Walla County, Hydrologic Unit 17070102, on left bank 0.8 mi (1.3 km) upstream from Gardena Creek, 2.8 mi (4.5 km) southwest of Touchet, 3.4 mi (5.5 km) downstream from Touchet River, and at mile 18.2 (29.3 km).

DRAINAGE AREA.--1,657 mi² (4,292 km²).

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 405 ft (123 m), from topographic map. Prior to Nov. 27, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good. Many diversions above station for irrigation.

AVERAGE DISCHARGE.--25 years, 613 ft³/s (17.36 m³/s), 444,100 acre-ft/yr (548 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s (946 m³/s) Dec. 22, 1964, gage height, 18.90 ft (5.761 m), from rating curve extended above 15,000 ft³/s (425 m³/s) on basis of slope-area measurement of peak flow; no flow July 30 to Aug. 8, Aug. 12, 13, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 2	0645	6,300	178	10.20	3.109	Jan. 17	0515	4,940	140	9.29	2.832
Dec. 8	0700	*10,300	292	*12.28	3.743	Apr. 9	1000	3,130	88.6	7.90	2.408
Dec. 27	0300	3,620	103	8.32	2.536						

Minimum discharge, 18 ft³/s (0.51 m³/s) July 31, gage height, 2.25 ft (0.686 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	144	1590	1510	1130	1610	1750	1300	486	100	25	65
2	46	130	5360	1350	1090	1350	1560	1580	459	102	47	59
3	42	124	3290	1260	1060	1190	1440	1620	402	98	60	58
4	48	124	2460	1720	966	1060	1410	1430	357	97	54	59
5	66	118	2700	2480	773	959	1510	1350	317	102	51	61
6	81	113	2010	2130	720	936	1890	1240	286	93	48	68
7	89	120	3430	1820	755	886	2030	1200	277	81	60	70
8	127	146	8690	2310	815	854	2010	1260	256	87	75	66
9	126	144	4950	2600	855	839	2850	1400	330	97	81	57
10	107	148	3230	2180	770	886	2610	1490	298	86	68	55
11	105	175	2420	2050	715	1060	2460	1680	347	79	57	52
12	110	154	1970	2020	740	976	2220	1350	295	74	52	54
13	106	148	1670	1740	1030	914	1960	1140	308	73	50	58
14	107	154	1410	1730	1070	903	1640	1190	305	68	61	57
15	95	168	1270	3310	1170	865	1870	1070	243	58	122	50
16	88	353	1230	4690	1890	833	1670	936	220	53	144	55
17	81	353	1130	4750	2730	876	1480	936	317	48	148	58
18	72	298	1060	4050	2650	1370	1410	828	371	42	124	54
19	64	298	987	3240	2040	2270	1300	703	295	42	113	58
20	63	295	925	2530	1710	1850	1710	666	264	41	102	64
21	84	286	881	2070	1440	1590	2460	596	258	33	103	51
22	198	277	839	1770	1270	1430	2160	510	266	33	98	41
23	195	280	782	1610	1200	1630	1790	514	232	35	89	41
24	134	308	797	1430	1140	1730	1580	502	201	37	82	39
25	126	410	982	1300	1110	1950	1590	455	177	39	87	42
26	148	531	1480	1190	1230	1620	1410	410	168	41	113	41
27	172	1260	3350	1120	1320	1460	1250	374	156	31	113	41
28	160	1110	2420	1130	2060	1340	1120	428	140	25	93	40
29	142	854	1960	1160	1810	1280	1090	388	114	24	84	45
30	126	689	2080	1200	---	1190	1130	364	102	21	84	50
31	126	---	1810	1170	---	1600	---	455	---	21	77	---
TOTAL	3280	9712	69163	64620	37259	39307	52360	29365	8247	1861	2565	1609
MEAN	106	324	2231	2085	1285	1268	1745	947	275	60.0	82.7	53.6
MAX	198	1260	8690	4750	2730	2270	2850	1680	486	102	148	70
MIN	42	113	782	1120	715	833	1090	364	102	21	25	39
AC-FT	6510	19260	137200	128200	73900	77970	103900	58250	16360	3690	5090	3190

CAL YR 1975 TOTAL 314396 MEAN 861 MAX 8690 MIN 19 AC-FT 623600
WTR YR 1976 TOTAL 319348 MEAN 873 MAX 8690 MIN 21 AC-FT 633400

14018600 WALLA WALLA RIVER BELOW WARM SPRINGS CREEK NEAR TOUCHET, WA

LOCATION.--Lat 46°02'16", long 118°45'55", in SE¼SE¼ sec.35, T.7 N., R.32 E., Walla Walla County, Hydrologic Unit 17070102, at county road bridge, 0.9 mi (1.4 km) downstream from Warm Springs Canyon, 2.5 mi (4.0 km) downstream from gaging station, 3.7 mi (6.0 km) west of Touchet, and at mile 15.7 (25.3 km)

DRAINAGE AREA.--About 1,690 mi^2 (4,380 km^2).

PERIOD OF RECORD.--Water years 1959 to 1971, 1974 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: July 1959 to June 1970.
SEDIMENT RECORDS: October 1962 to June 1970.

REMARKS.--Records collected prior to October 1973, published as 14018500 "near Touchet".

COOPERATION.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
08...	1200	72	310	8.3	15.1	--	77	10.0	290	40
22...	1230	191	285	7.6	11.7	48	45	8.1	600	45
NOV										
12...	1245	152	265	7.8	7.9	61	800	7.9	630	55
19...	1310	301	195	7.1	4.9	55	650	8.0	430	35
DEC										
09...	1330	4880	120	7.2	9.2	37	200	8.1	600	77
16...	1315	1230	125	7.8	4.8	45	145	7.9	425	47
JAN										
07...	1300	1800	110	7.7	5.7	45	100	7.9	220	31
21...	1420	2050	185	7.9	3.3	45	110	9.6	190	35
FEB										
04...	1230	986	150	7.0	1.4	45	180	10.3	275	30
25...	1300	1110	135	7.8	5.7	32	22	11.0	870	112
MAR										
09...	1245	845	160	6.3	5.9	44	22	7.1	300	32
23...	1255	1730	170	6.1	6.7	50	23	10.0	285	15
APR										
14...	1230	1680	95	7.4	15.0	45	90	7.6	290	45
27...	1230	1220	90	6.4	8.9	41	80	7.7	270	24
MAY										
12...	1145	1430	95	6.7	13.7	38	30	9.3	187	24
26...	1215	412	120	7.2	19.5	24	4	13.6	350	34
JUN										
09...	1230	274	125	6.7	21.2	39	4	7.7	108	8
23...	1230	230	130	6.8	19.6	25	12	8.0	205	17
JUL										
14...	1215	68	290	6.6	23.0	21	14	7.6	210	17
27...	1230	29	385	6.8	23.5	22	15	7.7	100	12
AUG										
11...	1230	58	385	6.7	23.5	20	15	6.3	110	<10
24...	1215	88	260	6.6	24.4	20	15	7.2	85	<10
SEP										
14...	1215	58	330	7.0	17.0	20	15	6.9	95	<10
28...	1240	42	380	6.8	20.9	20	20	10.3	95	14

14018600 WALLA WALLA RIVER BELOW WARM SPRINGS CREEK NEAR TOUCHET, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)
OCT									
08...	110	0	28	10	24	5.9	161	132	1.3
22...	130	0	32	11	24	5.5	173	142	7.0
NOV									
12...	92	0	23	8.5	16	4.3	122	100	3.1
19...	77	0	19	7.1	13	3.9	102	84	13
DEC									
09...	29	1	7.4	2.5	5.2	3.4	34	28	3.4
16...	46	0	12	4.0	6.9	3.2	64	53	1.6
JAN									
07...	42	2	10	4.2	5.8	3.0	49	40	1.6
21...	41	0	10	3.8	5.6	2.9	49	40	1.0
FEB									
04...	53	0	13	5.0	8.4	2.8	66	54	11
25...	56	1	15	4.6	7.4	2.7	67	55	1.7
MAR									
09...	57	0	14	5.4	9.2	2.7	77	63	62
23...	44	0	11	4.1	6.7	2.7	57	47	72
APR									
14...	37	0	9.1	3.5	5.5	2.3	51	42	3.2
27...	41	0	10	4.0	6.1	2.3	57	47	36
MAY									
12...	34	0	8.8	2.9	5.8	2.2	48	39	15
26...	59	0	15	5.3	9.6	2.9	78	64	7.9
JUN									
09...	72	0	18	6.6	13	3.7	98	80	31
23...	72	0	18	6.6	13	3.6	96	79	24
JUL									
14...	110	0	29	9.9	22	5.0	149	122	60
27...	170	0	43	14	34	7.0	206	169	52
AUG									
11...	110	0	29	10	22	5.5	149	122	48
24...	110	0	28	9.4	19	5.2	143	117	57
SEP									
14...	130	0	33	12	25	5.1	174	143	28
28...	160	0	39	14	31	5.7	206	169	52

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)
OCT									
08...	15	13	.58	.01	.20	.66	.86	.16	.11
22...	17	14	.56	.01	.12	.54	.66	.15	.10
NOV									
12...	6.8	12	.95	.01	.21	.25	.46	.18	.12
19...	12	6.8	.91	.02	.09	.38	.47	.18	.11
DEC									
09...	6.3	2.4	.62	.04	.26	2.1	2.4	1.9	.04
16...	5.9	4.7	.84	.01	.12	.98	1.1	.26	.05
JAN									
07...	3.9	3.5	.95	.02	.46	.74	1.2	.34	.14
21...	4.1	2.8	.90	.01	.24	.58	.82	.30	.05
FEB									
04...	6.4	4.4	1.1	.01	.26	.84	1.1	.18	.08
25...	5.7	3.7	1.3	.02	.16	.58	.74	.24	.05
MAR									
09...	.8	3.2	1.5	.02	.20	.50	.70	.21	.12
23...	4.4	2.8	1.2	.03	.26	1.0	1.3	.28	.08
APR									
14...	3.7	2.9	.70	.01	.19	.62	.81	.17	.03
27...	3.6	2.7	.71	.01	.18	.74	.92	.14	.04
MAY									
12...	5.0	4.3	.42	.01	.12	.59	.71	.17	.03
26...	7.8	5.3	.23	.01	.10	.63	.73	.09	.02
JUN									
09...	9.8	7.2	.30	.01	.17	.83	1.0	.10	.02
23...	8.0	7.6	.57	.02	.20	.69	.89	.16	.07
JUL									
14...	21	17	.31	.01	.14	.62	.76	.16	.07
27...	36	23	.38	.02	.20	1.0	1.2	.18	.08
AUG									
11...	22	15	.22	.01	.17	.93	1.1	.16	.09
24...	18	12	.35	.01	.07	1.2	1.3	.14	.05
SEP									
14...	25	17	.36	.01	.12	.61	.73	.11	.06
28...	32	21	.35	.01	.18	.68	.86	.14	.08

14019200 COLUMBIA RIVER AT MCNARY DAM, NEAR UMATILLA, OR

LOCATION.--Lat 45°56'05", long 119°17'45", in NE¼ sec.10, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070101, in powerhouse forebay between generator units 2 and 3 at McNary Dam, 2.5 mi (4.0 km) northeast of Umatilla, 3.0 mi (4.8 km) upstream from Umatilla River, and at mile 292.0 (469.8 km).

DRAINAGE AREA.--214,000 mi^2 (554,300 km^2), approximately.

PERIOD OF RECORD.--October 1950 to current year. Gage-height records collected at site at Umatilla since 1876 are contained in reports of U.S. Weather Bureau. Prior to October 1966, published as "below McNary Dam."

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1966, at site 1.2 mi (1.9 km) downstream (tailwater) at datum 240.04 ft (73.164 m) above mean sea level.

REMARKS.--Records computed from power output and flow over spillway at McNary Dam. Considerable regulation by many reservoirs upstream. Diurnal fluctuation cuased by powerplant and gates at McNary Dam since beginning of operation in April 1953. Many diversions for irrigation above station.

COOPERATION.--Daily discharge records furnished by Corps of Engineers. Three discharge measurements made and records reviewed by Geological Survey.

AVERAGE DISCHARGE.--26 years, 187,800 ft^3/s (5,320 m^3/s), 136,100,000 acre-ft/yr (168 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 818,000 ft^3/s (23,200 m^3/s) June 2, 1956, elevation, 277.01 ft (84.433 m), at site 1.2 mi (1.9 km) downstream; maximum daily discharge, 798,000 ft^3/s (22,600 m^3/s) June 2,1956; minimum daily discharge, 40,800 ft^3/s (1,160 m^3/s) Mar. 8, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1894, reached an elevation of 284.2 ft (86.62 m), and that of May 31, 1948, reached an elevation of about 280 ft (85.3 m), both at site 1.2 mi (1.9 km) downstream from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 414,000 ft^3/s (11,720 m^3/s) May 12; maximum forebay elevation, 339.9 ft (103.60 m) Apr. 28-30, July 24, 25, Aug. 1, 14, 24; minimum daily discharge, 70,700 ft^3/s (2,000 m^3/s) Oct. 5; minimum forebay elevation, 335.5 ft (102.26 m) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111000	135000	148000	174000	211000	230000	225000	258000	334000	242000	180000	210000
2	107000	120000	166000	203000	197000	232000	229000	258000	333000	261000	222000	211000
3	107000	118000	189000	171000	210000	228000	218000	281000	302000	236000	234000	175000
4	107000	126000	197000	151000	215000	222000	200000	267000	301000	237000	260000	154000
5	70700	144000	210000	191000	228000	207000	207000	310000	293000	231000	272000	146000
6	112000	151000	199000	192000	181000	216000	223000	328000	292000	239000	273000	161000
7	107000	155000	170000	201000	206000	214000	233000	304000	294000	208000	250000	184000
8	101000	137000	233000	176000	198000	221000	199000	346000	304000	248000	253000	257000
9	108000	130000	260000	189000	201000	217000	277000	395000	306000	218000	210000	212000
10	102000	159000	214000	176000	192000	204000	273000	398000	286000	234000	248000	209000
11	86400	141000	202000	177000	209000	219000	148000	412000	306000	236000	239000	195000
12	90700	150000	226000	175000	204000	227000	238000	414000	318000	217000	238000	162000
13	104000	129000	240000	200000	205000	212000	314000	384000	306000	238000	226000	172000
14	130000	137000	215000	178000	197000	177000	323000	378000	266000	233000	208000	150000
15	129000	101000	199000	163000	205000	214000	327000	393000	249000	265000	200000	152000
16	114000	134000	204000	170000	180000	200000	301000	371000	265000	233000	212000	164000
17	93000	164000	194000	214000	200000	178000	292000	372000	277000	242000	191000	147000
18	98500	177000	212000	201000	227000	207000	316000	373000	290000	261000	214000	136000
19	96200	176000	187000	192000	228000	228000	272000	364000	297000	294000	263000	121000
20	121000	177000	171000	206000	208000	237000	263000	360000	301000	305000	242000	123000
21	139000	156000	178000	209000	212000	193000	293000	359000	317000	283000	229000	143000
22	136000	140000	179000	222000	170000	193000	254000	334000	335000	257000	222000	152000
23	158000	133000	185000	208000	146000	218000	274000	348000	332000	231000	215000	141000
24	152000	152000	168000	205000	215000	230000	240000	357000	297000	216000	200000	157000
25	129000	156000	148000	194000	226000	228000	259000	359000	299000	210000	203000	144000
26	131000	159000	144000	208000	224000	209000	265000	359000	286000	213000	207000	108000
27	127000	155000	179000	193000	226000	228000	256000	338000	270000	215000	210000	132000
28	145000	147000	161000	188000	229000	181000	250000	339000	277000	207000	200000	139000
29	131000	155000	170000	195000	213000	189000	253000	339000	235000	223000	231000	163000
30	126000	162000	211000	218000	---	205000	249000	327000	250000	242000	232000	147000
31	136000	---	193000	213000	---	217000	---	337000	---	213000	209000	---
TOTAL	3605500	4376000	5952000	5953000	6013000	6581000	7671000	10762000	8818000	7388000	6993000	4867000
MEAN	116300	145900	192000	192000	207300	212300	255700	347200	293900	238300	225600	162200
MAX	158000	177000	260000	222000	229000	237000	327000	414000	335000	305000	273000	257000
MIN	70700	101000	144000	151000	170000	177000	148000	258000	235000	207000	180000	108000
AC-FT	7152000	8680000	11810000	11810000	11930000	13050000	15220000	21350000	17490000	14650000	13870000	9654000

CAL YR 1975 TOTAL 68375600 MEAN 187300 MAX 374000 MIN 70700 AC-FT 135600000
WTR YR 1976 TOTAL 78979500 MEAN 215800 MAX 414000 MIN 70700 AC-FT 156700000

14019250 COLUMBIA RIVER AT UMATILLA, OR

LOCATION.--Lat 45°55'53", long 119°19'39", in SW¼NW¼ sec.9, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070101, near span on upstream side of bridge at Umatilla, and at mile 290.5 (467.4 km).

DRAINAGE AREA.--214,000 mi² (554,300 km²), approximately.

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1974 to current year.

INSTRUMENTATION.--Temperature recorder since October 1974.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 20.5°C July 26-31, Aug. 4, 5, 17-21, 1975; minimum, 1.0°C Feb. 7, 1976.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 20.0°C July 31, Aug. 11, 12, Sept. 1; minimum, 1.0°C Feb. 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	CHEM-ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT											
30...	0845	126000	214	7.4		11.3	2	B8	B8	8.2	115
NOV											
21...	1030	156000	203	7.5	8.9	9.8	4	B5	B9	7.8	107
DEC											
17...	0930	194000	198	7.4	5.0	12.6	9	33	24	12	169
JAN											
28...	0900	188000	202	7.4		13.6	7	24	B18	10	115
FEB											
25...	0900	226000	178	7.8	3.8	13.7	0	B10	E10	10	120
MAR											
31...	1000	217000	171	7.4	6.0	13.0	10	B4	81	11	119
APR											
27...	1530	256000	161	8.0	9.0	13.2	4	80	B1	11	115
MAY											
26...	1030	356000	113	8.0	12.1	12.8	11	B2	B18	9.2	79
JUL											
02...	1000	261000	106	8.2	15.7	11.3	--	B3	B3	6.9	80
AUG											
04...	0830	260000	136	8.3	18.1	11.0	20	B1	B3	4.4	83
25...	1000	203000	140	8.3	18.3	10.5	2	B1	B3	4.0	85
SEP											
26...	1200	108000	172	8.2	18.0	10.0	17	B1	<1	5.8	86

DATE	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)
OCT											
30...	.16	39100	24	.16	.02	.20	.22	.38	.04	3	<10
NOV											
21...	.15	45100	0	.22	.02	.57	.59	.81	.03	2	<10
DEC											
17...	.23	88500	12	.36	.01	.39	.40	.76	.07	2	--
JAN											
28...	.16	58400	7	.43	.03	.18	.21	.64	.04	2	<10
FEB											
25...	.16	73200	16	.45	.02	.20	.22	.67	.05	1	<10
MAR											
31...	.16	69700	5	.44	.03	.30	.33	.77	.07	0	<10
APR											
27...	.16	79500	5	.19	.00	.40	.40	.59	.06	1	<10
MAY											
26...	.11	75900	24	.11	.04	.19	.23	.34	.07	0	0
JUL											
02...	.11	56400	13	.01	.03	.27	.30	.31	.04	0	1
AUG											
04...	.11	58300	25	.00	.03	.00	.00	.00	.04	0	<10
25...	.12	46600	0	.07	.04	.11	.15	.22	.04	1	<10
SEP											
26...	.12	25100	0	.18	.02	.33	.35	.53	.03	--	<10

B Results based upon colony counts outside the ideal range.
E Estimated.

14019250 COLUMBIA RIVER AT UMATILLA, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)
OCT 30...	14	10	240	100	.0	0	0	13	1.20	.000
NOV 21...	0	20	70	<100	.0	0	30	3.6	.000	.000
DEC 17...	--	--	--	--	--	0	--	5.1	.000	.000
JAN 28...	0	<10	560	<100	.0	0	40	6.8	--	--
FEB 25...	0	10	930	<100	.0	0	40	2.2	--	--
MAR 31...	0	20	650	<100	.0	0	50	3.0	6.40	.000
APR 27...	0	30	740	<100	.0	0	20	4.7	13.3	.000
MAY 26...	10	10	710	0	<.5	0	60	2.5	11.0	.000
JUL 02...	<10	0	370	8	<.5	0	30	--	11.4	3.34
AUG 04...	0	20	410	<100	.3	0	40	2.8	--	--
25...	10	10	290	<100	.0	0	20	17	--	--
SEP 26...	0	10	200	<100	.0	0	10	1.7	4.29	.000

DATE	TIME	TOTAL CAL-CIUM (CA) (MG/L)	TOTAL MAG-NE-SIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	TOTAL PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	OIL AND GREASE (MG/L)
OCT 30...	0845	19	5.5	19	1.7	95	0	17	4.0	0
JAN 28...	0900	22	5.3	7.0	1.8	88	0	17	3.9	0
APR 27...	1530	24	5.3	6.5	1.6	85	0	14	3.4	0
AUG 04...	0830	14	1.6	1.2	.3	66	0	10	1.4	0

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.0	18.0	13.0	12.5	8.0	8.0	5.0	4.5	3.5	3.5	4.5	4.0
2	19.0	18.0	13.0	12.5	8.0	7.5	5.0	4.5	3.5	3.5	4.0	3.5
3	18.5	18.5	13.5	13.0	8.5	8.0	4.5	4.0	3.5	3.0	4.0	3.5
4	18.5	18.0	13.5	13.0	8.5	8.0	4.5	4.0	3.0	2.5	4.0	3.0
5	18.5	18.0	13.0	13.0	8.5	7.5	4.5	4.0	2.5	2.0	3.5	3.0
6	18.0	18.0	13.0	13.0	8.0	7.5	4.5	4.0	2.0	1.5	3.5	3.0
7	19.0	17.5	13.5	13.0	7.5	7.5	4.5	4.0	2.0	1.0	3.5	3.5
8	17.5	17.0	13.0	12.0	7.5	7.0	4.5	4.0	2.5	1.5	4.0	3.5
9	17.5	17.0	12.0	12.0	7.0	6.5	4.5	4.0	2.5	2.0	4.5	3.5
10	17.0	16.5	12.0	11.0	7.0	6.5	4.5	4.0	3.0	2.0	4.5	4.0
11	16.5	16.5	11.0	11.0	6.5	6.5	4.5	4.0	3.0	2.5	4.5	4.0
12	16.5	16.0	11.0	10.5	6.5	6.0	4.5	4.0	3.0	2.5	4.5	4.0
13	16.5	16.0	10.5	10.5	6.0	6.0	4.5	4.0	3.0	2.5	4.5	4.0
14	16.0	15.5	11.0	10.5	6.0	5.5	4.5	4.5	3.5	3.0	4.5	4.0
15	16.0	15.5	11.0	10.5	6.0	5.5	5.0	4.5	3.5	3.0	5.0	4.0
16	16.0	15.5	11.0	10.5	5.5	5.0	5.0	4.5	3.5	3.5	5.0	4.5
17	16.0	15.5	10.5	10.0	6.0	5.0	5.5	4.5	4.0	3.5	5.5	5.0
18	15.5	15.5	10.5	10.0	6.0	5.5	5.5	5.0	4.0	3.5	5.0	5.0
19	15.5	15.5	10.0	9.0	5.5	5.5	5.0	4.0	4.0	4.0	5.0	5.0
20	15.5	15.0	9.5	9.0	5.5	5.5	4.5	4.0	4.0	3.5	5.5	5.0
21	15.0	14.5	9.0	9.0	5.5	5.5	4.0	4.0	4.0	3.5	5.5	5.0
22	15.0	14.0	9.0	9.0	5.5	5.0	4.0	3.5	4.0	3.5	5.0	5.0
23	14.5	14.0	9.0	9.0	5.5	5.0	4.0	3.5	4.0	3.5	5.5	5.0
24	14.0	13.5	9.0	8.5	5.5	5.0	3.5	3.5	4.0	3.5	5.5	5.5
25	14.0	13.5	9.0	8.5	5.0	5.0	3.5	3.5	4.0	4.0	5.5	5.0
26	14.0	13.0	8.5	8.5	5.5	5.0	3.5	3.5	4.5	4.0	6.0	5.5
27	13.5	13.0	9.0	8.5	5.5	5.5	3.5	3.5	4.5	4.0	5.5	5.0
28	13.0	12.5	8.5	8.0	5.5	5.0	3.5	3.5	4.5	4.0	6.0	5.5
29	13.0	13.0	8.0	8.0	5.5	5.5	3.5	3.5	4.5	4.0	6.0	5.5
30	13.0	13.0	8.0	8.0	5.5	5.0	3.5	3.5	---	---	6.5	5.0
31	13.0	12.5	---	---	5.5	5.0	3.5	3.5	---	---	6.0	6.0
MONTH	19.0	12.5	13.5	8.0	8.5	5.0	5.5	3.5	4.5	1.0	6.5	3.0

14019250 COLUMBIA RIVER AT UMATILLA, OR--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	5.5	10.5	9.5	12.5	12.0	15.0	14.5	19.5	19.0	20.0	18.5
2	6.0	5.5	10.0	10.0	13.0	12.0	15.5	14.5	19.5	19.0	19.5	19.0
3	6.0	5.5	10.5	9.5	12.5	12.0	15.5	15.0	19.0	18.5	19.5	18.5
4	6.5	5.5	11.0	10.5	13.0	12.5	16.0	15.5	19.0	18.0	19.5	18.5
5	7.0	6.0	11.0	10.5	13.0	12.5	16.0	15.0	19.0	18.5	19.5	19.0
6	7.0	6.5	11.0	10.5	13.5	12.5	16.5	15.0	19.0	18.5	19.0	18.5
7	7.5	7.0	11.5	10.5	13.0	13.0	16.5	15.5	19.0	18.5	19.0	18.5
8	7.5	7.0	12.0	10.5	14.0	13.0	16.5	16.0	19.0	18.5	19.0	18.5
9	7.5	7.0	12.5	11.5	14.0	13.0	16.5	16.0	19.0	18.0	18.5	17.5
10	8.0	7.5	11.5	11.5	14.0	13.5	17.0	16.0	19.0	18.0	18.5	17.5
11	8.5	8.0	11.5	11.0	14.0	13.5	17.0	16.5	20.0	18.5	18.0	17.5
12	9.0	8.0	12.0	11.0	14.0	14.0	17.0	16.5	20.0	19.0	18.0	17.5
13	9.0	8.5	12.0	11.0	14.0	13.5	17.0	16.0	19.5	19.0	18.0	17.0
14	9.0	8.5	12.0	11.0	14.5	13.5	17.0	16.5	19.5	19.0	17.5	17.5
15	8.5	8.0	12.5	11.5	14.5	14.0	17.5	16.5	19.5	19.0	18.0	17.0
16	8.5	7.5	12.5	11.5	15.0	14.5	18.0	16.5	19.0	18.5	18.0	17.0
17	8.0	7.5	12.0	11.5	15.0	14.0	18.0	17.0	19.0	18.0	17.5	17.0
18	8.5	7.5	12.0	11.0	15.5	14.5	18.0	17.0	19.0	18.0	17.5	17.0
19	8.5	7.5	12.0	11.5	15.5	15.0	17.5	17.0	19.0	18.5	18.0	17.5
20	8.5	8.0	12.0	11.5	15.5	15.0	17.5	17.0	19.0	18.5	18.0	17.5
21	8.5	8.0	12.5	11.5	15.5	15.0	17.5	17.0	19.0	18.0	18.0	17.5
22	8.5	8.0	12.5	11.5	15.0	14.5	17.5	17.0	19.0	18.5	18.5	17.5
23	9.0	8.5	12.5	11.5	14.5	14.0	18.0	17.0	19.5	18.5	18.5	18.0
24	9.0	8.5	12.5	12.0	14.5	14.0	18.5	18.0	19.5	18.5	18.0	17.5
25	9.0	8.5	12.5	12.0	15.0	14.0	19.0	18.0	19.0	18.5	18.0	17.5
26	9.0	8.5	13.0	12.0	15.0	14.0	19.0	18.0	19.0	18.0	18.0	17.0
27	9.5	9.0	13.0	12.5	15.5	14.0	19.0	18.0	19.0	18.0	18.0	17.0
28	9.5	9.0	13.0	12.0	15.5	14.5	19.0	18.0	19.0	18.0	18.0	17.5
29	9.5	9.0	13.0	12.0	15.0	14.5	19.5	18.5	19.0	18.0	18.5	18.0
30	10.0	9.0	13.0	12.5	15.0	14.5	19.5	18.5	19.5	18.0	19.0	18.0
31	---	---	13.0	12.0	---	---	20.0	19.0	19.5	18.5	---	---
MONTH	10.0	5.5	13.0	9.5	15.5	12.0	20.0	14.5	20.0	18.0	20.0	17.0
YEAR	20.0	1.0										

14105700 COLUMBIA RIVER AT THE DALLES, OR

LOCATION.--Lat 45°36'27", long 121°10'20", in SW¼SW¼ sec.34, T.2 N., R.13 E., Wasco County, Hydrologic Unit 17070105, Corps of Engineers land, on left bank 0.3 mi (0.5 km) downstream from Mill Creek, 2.6 mi (4.2 km) downstream from The Dalles Dam, and at mile 188.9 (303.9 km).

DRAINAGE AREA.--237,000 mi² (614,000 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1857 to September 1877 (annual maximum only, at Lower Cascades Landing, published in WSP 1318), June 1878 to current year. Published as "near The Dalles" 1936-56.

REVISED RECORDS.--WSP 534: 1920(m). WSP 1094: 1894. WSP 1248: 1866, 1888, 1899, 1909. WSP 1518: 1876(M).

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is at mean sea level. See WSP 1738 for history of changes prior to Mar. 16, 1957. Mar. 16, 1957, to Sept. 30, 1968, water-stage recorder at site 0.4 mi (0.6 km) upstream at same datum.

REMARKS.--Records excellent. Considerable regulation by many large reservoirs. Diurnal fluctuations caused by powerplant and gates at The Dalles Dam. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--98 years, 194,900 ft³/s (5,520 m³/s), 141,200,000 acre-ft/yr (174 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--1858-1976: Maximum discharge, 1,240,000 ft³/s (35,100 m³/s) June 6, 1894, gage height, 106.5 ft (32.46 m).
1878-1976: Minimum discharge, 12,100 ft³/s (343 m³/s) Apr. 16, 1968 (recorded by AVM due to closure of John Day Dam).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 418,000 ft³/s (11,800 m³/s) May 14; maximum gage height, 83.68 ft (25.506 m) May 16; minimum daily discharge, 76,800 ft³/s (2,170 m³/s) Oct. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102000	132000	149000	167000	224000	248000	233000	273000	344000	269000	145000	244000
2	107000	127000	199000	214000	224000	264000	201000	274000	334000	243000	215000	227000
3	103000	111000	213000	183000	232000	262000	238000	284000	329000	209000	219000	187000
4	119000	135000	251000	158000	240000	236000	221000	310000	315000	207000	261000	128000
5	84400	150000	193000	175000	236000	239000	234000	320000	291000	201000	257000	125000
6	99600	154000	220000	190000	179000	206000	214000	325000	292000	229000	259000	147000
7	112000	163000	179000	242000	201000	169000	244000	336000	305000	201000	252000	199000
8	116000	139000	252000	232000	204000	228000	232000	351000	294000	238000	258000	211000
9	120000	131000	268000	213000	184000	218000	250000	379000	300000	227000	223000	215000
10	116000	153000	245000	205000	206000	247000	242000	396000	300000	219000	243000	193000
11	80500	147000	215000	147000	219000	200000	179000	414000	296000	237000	242000	197000
12	76800	161000	228000	202000	202000	226000	229000	413000	274000	215000	238000	165000
13	99900	135000	208000	192000	196000	213000	349000	413000	254000	247000	236000	205000
14	113000	139000	229000	208000	219000	190000	345000	418000	272000	257000	201000	150000
15	127000	109000	164000	145000	194000	218000	339000	408000	266000	261000	188000	143000
16	139000	127000	187000	191000	203000	215000	337000	413000	256000	248000	227000	150000
17	111000	179000	219000	227000	235000	192000	316000	398000	261000	251000	223000	155000
18	80500	185000	212000	245000	237000	217000	296000	378000	275000	252000	175000	125000
19	80900	201000	205000	217000	223000	238000	297000	372000	284000	263000	241000	127000
20	120000	182000	168000	193000	198000	227000	293000	362000	291000	266000	244000	137000
21	138000	162000	159000	197000	228000	214000	298000	357000	301000	287000	232000	151000
22	131000	128000	195000	231000	175000	231000	315000	359000	303000	285000	199000	155000
23	155000	129000	192000	230000	211000	226000	295000	352000	324000	255000	249000	131000
24	170000	152000	145000	193000	239000	225000	228000	352000	324000	182000	216000	140000
25	131000	150000	158000	209000	235000	231000	228000	346000	300000	202000	189000	136000
26	137000	151000	139000	229000	223000	257000	249000	344000	276000	247000	178000	113000
27	145000	152000	190000	178000	237000	248000	258000	348000	276000	222000	243000	144000
28	133000	154000	178000	199000	228000	159000	254000	349000	277000	243000	164000	133000
29	143000	167000	181000	205000	243000	207000	271000	347000	278000	219000	239000	141000
30	130000	154000	215000	226000	---	210000	272000	347000	272000	233000	225000	149000
31	136000	---	222000	211000	---	228000	---	347000	---	199000	234000	---
TOTAL	3656600	4459000	6178000	6254000	6275000	6889000	8007000	11085000	8764000	7314000	6915000	4823000
MEAN	118000	148600	199300	201700	216400	222200	266900	357600	292100	235900	223100	160800
MAX	170000	201000	268000	245000	243000	264000	349000	418000	344000	287000	261000	244000
MIN	76800	109000	139000	145000	175000	159000	179000	273000	254000	182000	145000	113000
AC-FT	7253000	8844000	12250000	12400000	12450000	13660000	15880000	21990000	17380000	14510000	13720000	9566000

CAL YR 1975 TOTAL 70342400 MEAN 192700 MAX 422000 MIN 76800 AC-FT 139500000
WTR YR 1976 TOTAL 80419600 MEAN 220300 MAX 418000 MIN 76800 AC-FT 159900000

14105700 COLUMBIA RIVER AT THE DALLES, OR--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at The Dalles Dam, 3.2 mi (5.1 km) upstream from gaging station.

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1950 to current year.
WATER TEMPERATURES: December 1950 to September 1969, October 1973 to current year.

REMARKS.--No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

EXTREMES OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 324 micromhos Dec. 7, 1955; minimum daily, 95 micromhos June 8, 1972.
WATER TEMPERATURES: Maximum observed, 27.0°C Aug. 12, 13, 1958; minimum daily, 0.0°C on several days during winter months of several years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 203 micromhos Apr. 17; minimum observed, 112 micromhos June 25-28, July 1-3.
WATER TEMPERATURES: Maximum observed, 20.°C Aug. 1, 5, 6, 8; minimum observed, 2.5°C Feb. 6-16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	CHEM-ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT											
28...	1400	133000	189	7.8	13.4	15.3	4	B3	<1	7.1	103
NOV											
19...	1400	201000	223	7.7	9.4	10.7	1	B4	B3	9.7	119
DEC											
15...	1430	164000	175	7.5	6.5	12.4	8	25	B123	12	114
JAN											
26...	1430	229000	172	7.5	4.0	13.0	1	21	B8	13	117
FEB											
23...	1715	211000	165	8.0	4.0	13.4	5	B1	E4	10	110
MAR											
29...	1700	207000	176	8.1	6.3	12.4	6	B2	B12	12	119
APR											
26...	1400	249000	154	7.9	9.1	12.4	9	B1	B4	10	106
MAY											
26...	1700	346000	114	8.0	13.0	12.2	10	B2	B2	10	83
JUN											
30...	1400	272000	104	8.2	15.6	11.4	<10	<1	B9	6.9	71
AUG											
08...	1330	258000	128	8.1	19.3	9.2	21	404	B8	4.5	70
23...	1300	249000	142	8.1	18.5	9.5	2	B1	<1	4.3	77
SEP											
30...	1200	149000	154	8.0	18.5	10.0	23	B2	B1	5.6	78

DATE	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)
OCT											
28...	.14	37000	32	.10	.00	.48	.48	.58	.03	2	0
NOV											
19...	.16	64600	2	.25	.04	.38	.42	.67	.04	2	<10
DEC											
15...	.16	50500	16	.27	.02	.29	.31	.58	.12	3	<10
JAN											
26...	.16	72300	5	.49	.04	.16	.20	.69	.05	2	<10
FEB											
23...	.15	62700	3	.39	.03	.19	.22	.61	.02	2	<10
MAR											
29...	.16	66500	10	.40	.04	.26	.30	.70	.07	1	<10
APR											
26...	.14	71300	19	.23	.00	.15	.15	.38	.07	1	<10
MAY											
26...	.11	77500	70	.06	.02	.23	.25	.31	.06	0	1
JUN											
30...	.10	52100	9	.01	.01	.17	.18	.19	.05	0	1
AUG											
08...	.10	48800	16	.00	.00	.00	.00	.00	.02	0	<10
23...	.10	51800	1	.10	.01	.16	.17	.27	.04	1	<10
SEP											
30...	.11	31400	0	.11	.02	.27	.29	.40	.04	--	<10

B Results based upon colony counts outside the ideal range.

14105700 COLUMBIA RIVER AT THE DALLES, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO- PHYLL A (UG/L)	CHLORO- PHYLL B (UG/L)
OCT 28...	0	10	300	0	.0	0	60	7.8	11.0	.000
NOV 19...	10	20	160	<100	.0	0	8	12	26.0	.000
DEC 15...	0	10	1600	<100	.0	0	40	3.0	--	--
JAN 26...	0	<10	1200	<100	.0	0	70	8.0	9.30	8.30
FEB 23...	0	10	350	<100	.1	0	40	6.8	5.80	.200
MAR 29...	10	20	630	<100	.0	0	70	3.6	7.10	.100
APR 26...	0	20	870	<100	.0	0	190	3.5	10.8	.000
MAY 26...	10	10	610	5	<.5	0	70	2.5	11.6	.000
JUN 30...	<10	10	320	8	<.5	0	20	--	10.3	.000
AUG 08...	10	10	370	<100	2.4	0	120	2.3	--	--
23...	20	<10	430	<100	.0	0	50	2.3	--	--
SEP 30...	0	20	320	<100	.1	0	20	1.5	2.45	.032

DATE	TIME	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	TOTAL PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	OIL AND GREASE (MG/L)
OCT 28...	1400	17	5.1	7.7	1.5	85	0	15	3.9	0
JAN 26...	1430	18	5.9	8.8	1.7	88	0	17	4.2	0
APR 26...	1400	17	5.4	5.8	1.5	81	0	14	2.8	0
AUG 08...	1330	14	1.6	1.3	.3	63	0	9.4	1.5	0

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	177	170	161	184	198	185	168	119	112	120	135
2	165	176	169	160	184	193	188	170	119	112	119	135
3	165	173	172	162	---	189	189	174	116	112	121	137
4	167	171	172	163	185	190	189	---	115	114	122	138
5	167	173	172	165	186	188	193	171	114	115	126	136
6	166	177	170	166	186	192	192	171	113	115	122	137
7	166	185	173	165	174	192	189	171	114	116	---	136
8	167	190	172	164	175	194	186	174	114	116	---	135
9	169	190	173	161	174	194	184	175	114	117	---	136
10	170	189	181	163	175	193	185	176	113	117	---	134
11	169	191	188	163	176	191	184	174	113	118	128	135
12	166	190	186	166	176	187	182	168	115	118	128	136
13	165	189	182	173	176	188	181	160	116	118	129	136
14	166	189	179	176	178	185	183	155	116	118	128	---
15	169	191	181	181	177	186	193	149	118	119	129	---
16	170	189	183	178	182	185	202	143	119	120	130	---
17	168	190	184	176	183	185	203	142	120	120	130	---
18	167	192	184	175	183	186	198	139	122	120	131	---
19	170	189	189	178	181	184	183	136	124	120	133	---
20	174	189	185	180	182	185	172	132	124	120	131	---
21	176	190	184	180	182	185	165	130	124	119	131	---
22	177	187	179	177	184	186	162	127	119	118	132	---
23	177	185	177	176	187	185	160	128	116	118	132	---
24	176	183	174	177	196	187	162	126	113	119	133	---
25	179	181	167	186	196	187	165	124	112	119	134	---
26	179	176	164	190	193	188	165	123	112	120	134	---
27	179	174	162	192	192	189	165	124	112	120	133	---
28	176	171	161	192	191	192	167	123	112	120	133	---
29	173	170	160	189	192	192	167	122	113	121	132	---
30	176	168	160	185	---	198	167	117	113	120	132	---
31	175	---	161	183	---	196	---	118	---	120	134	---
MONTH	171	183	175	174	183	189	180	147	116	118	129	---
YEAR	MAX	203	MIN	112	MEAN	160						

14105700 COLUMBIA RIVER AT THE DALLES, OR--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.5	13.5	8.5	4.5	4.0	4.5	6.5	9.5	12.0	15.5	20.0	
2	18.5	13.5	8.5	4.5	3.5	4.5	6.0	9.5	12.5	15.5	---	
3	18.5	13.5	8.5	4.5	---	4.5	6.5	10.0	12.5	16.0	---	
4	18.5	12.5	8.5	4.5	3.5	4.5	6.5	---	12.5	16.0	---	
5	18.5	12.5	8.5	4.5	3.5	4.5	6.5	11.0	12.5	16.0	20.0	
6	18.5	12.5	8.5	4.5	2.5	4.5	6.5	11.0	12.5	16.5	20.0	
7	17.5	12.0	8.5	4.5	2.5	4.0	7.0	11.5	13.5	16.5	---	
8	17.5	12.0	8.5	4.5	2.5	4.0	7.0	11.5	13.5	16.5	20.0	
9	17.5	11.5	7.5	4.5	2.5	4.5	7.0	11.5	13.5	17.0	---	
10	17.5	11.5	7.5	4.5	2.5	4.5	7.0	12.0	13.5	17.0	---	
11	17.5	11.5	7.5	4.5	2.5	4.5	7.5	12.0	14.0	17.0	---	
12	17.5	11.5	7.0	4.5	2.5	4.5	7.5	12.5	14.0	17.0	---	
13	17.0	11.5	7.0	4.5	2.5	4.5	7.5	12.5	14.5	17.0	---	
14	16.5	11.5	7.0	4.5	2.5	4.5	8.5	12.5	14.5	17.0	---	
15	16.5	11.5	7.0	4.5	2.5	4.5	8.5	12.5	14.5	17.5	---	
16	16.5	11.5	7.0	4.5	2.5	4.5	8.5	12.5	14.5	18.5	---	
17	16.5	11.5	7.0	4.5	3.5	5.0	9.0	12.5	14.5	18.5	---	
18	16.0	11.0	7.0	4.5	3.5	5.0	9.0	12.5	15.0	18.5	---	
19	16.0	10.0	6.0	4.5	3.5	5.0	9.0	12.5	15.5	18.5	---	
20	16.0	10.0	6.0	4.5	3.5	5.0	9.0	12.5	15.5	18.5	---	
21	16.0	9.5	6.0	4.5	3.5	5.5	9.0	12.5	15.5	18.5	---	
22	15.5	9.5	5.0	4.5	4.0	5.5	9.0	12.5	15.5	18.5	---	
23	15.0	9.5	5.0	4.5	4.0	5.5	9.0	12.5	15.5	18.5	---	
24	15.0	9.0	5.0	4.5	4.0	6.0	9.0	12.5	15.5	18.5	---	
25	14.5	9.0	5.0	6.0	4.5	6.0	9.0	12.5	15.5	18.5	---	
26	14.0	9.0	5.0	4.5	4.5	6.0	9.0	12.5	15.5	18.5	---	
27	14.0	9.0	5.0	4.5	4.5	6.0	9.0	12.5	15.5	18.5	---	
28	14.0	8.5	5.0	4.0	4.5	6.0	9.5	12.5	15.5	19.0	---	
29	13.5	8.5	5.0	4.0	4.5	6.0	9.5	12.5	15.5	---	---	
30	13.5	8.5	5.0	4.0	---	6.0	9.5	12.5	15.5	19.5	---	
31	13.5	---	5.0	4.0	---	6.5	---	12.0	---	---	---	
MONTH	16.5	11.0	6.5	4.5	3.5	5.0	8.0	12.0	14.5	17.5	---	
YEAR	MAX	20.0	MIN	2.5	MEAN	10.0						

14107000 KLICKITAT RIVER ABOVE WEST FORK NEAR GLENWOOD, WA

LOCATION.--Lat 46°15'54", long 121°14'38", in NW¼SW¼ sec.18, T.9 N., R.13 E., Yakima County, Hydrologic Unit 17070106, Yakima Indian reservation, on right bank 0.8 mi (1.3 km) upstream from Swamp Creek, 1.9 mi (3.1 km) upstream from West Fork, 17.0 mi (27.4 km) north of Glenwood, and at mile 64.7 (104.1 km).

DRAINAGE AREA.--151 mi² (391 km²).

PERIOD OF RECORD.--October 1944 to current year. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Altitude of gage is 2,720 ft (829 m), from river-profile map.

REMARKS.--Records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--32 years, 337 ft³/s (9.544 m³/s), 30.31 in/yr (770 mm/yr), 244,200 acre-ft/yr (301 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,280 ft³/s (92.9 m³/s) May 27, 1948, gage height, 4.28 ft (1.305 m); minimum, 4.4 ft³/s (0.12 m³/s) Feb. 1, 1957 (result of freezeup, discharge measurement); minimum gage height, 0.76 ft (0.232 m) Nov. 4, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s (25.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 4	1100	*2,420	68.5	*3.73	1.137	May 9	2200	1,540	43.6	3.05	0.930
May 2	2200	1,100	31.2	2.62	.799	June 17	0100	902	25.5	2.39	.728

Minimum discharge, 103 ft³/s (2.92 m³/s) Oct. 1, 2, Sept. 30; minimum gage height, 0.82 ft (0.250 m), Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	144	697	375	313	186	172	710	615	524	234	146
2	106	163	1500	407	304	209	169	952	578	478	234	144
3	111	224	1540	375	300	192	169	969	554	467	245	141
4	124	218	1920	360	283	208	189	879	530	478	228	136
5	113	218	1160	365	255	218	221	856	524	490	221	134
6	119	208	803	327	283	205	271	863	530	501	259	134
7	113	192	760	322	318	175	275	987	560	524	271	131
8	113	178	803	313	327	169	501	1160	642	590	248	129
9	134	166	774	296	275	172	536	1360	731	548	228	126
10	141	163	676	287	259	175	524	1400	774	461	218	124
11	124	154	578	283	248	169	578	1250	731	439	211	124
12	119	146	518	275	255	163	554	1150	697	428	205	124
13	113	146	473	259	248	163	513	1220	642	417	198	124
14	113	192	434	279	238	163	490	1240	602	396	192	129
15	124	417	417	428	231	160	461	1140	615	386	218	139
16	121	279	370	536	241	166	417	1140	796	391	211	126
17	131	234	349	530	234	178	396	1130	856	412	192	121
18	134	205	326	501	221	192	375	1000	825	412	186	121
19	139	211	302	456	218	181	365	944	840	380	178	119
20	139	186	287	423	211	175	396	863	818	360	181	116
21	146	178	255	401	205	169	375	840	731	341	175	113
22	139	172	283	386	201	175	365	856	690	313	169	116
23	129	175	275	365	201	172	350	894	609	318	166	119
24	128	224	304	336	201	178	350	871	578	313	163	113
25	130	221	287	331	198	166	341	840	566	309	172	111
26	138	238	401	331	195	166	331	825	518	287	166	111
27	134	218	401	370	183	163	360	919	501	275	157	108
28	134	195	360	355	183	160	391	886	513	255	154	108
29	141	186	412	341	192	157	428	803	572	252	152	106
30	169	205	484	327	---	163	554	738	572	248	149	106
31	154	---	423	319	---	181	---	676	---	245	146	---
TOTAL	3976	6056	18552	11258	7021	5468	11417	30361	19310	12238	6127	3699
MEAN	128	202	598	363	242	176	381	979	644	395	198	123
MAX	169	417	1920	536	327	218	578	1400	856	590	271	146
MIN	103	144	255	259	183	157	169	676	501	245	146	106
AC-FT	7890	12010	36800	22330	13930	10850	22650	60220	38300	24270	12150	7340

CAL YR 1975 TOTAL 138530 MEAN 380 MAX 1920 MIN 103 AC-FT 274800
WTR YR 1976 TOTAL 135483 MEAN 370 MAX 1920 MIN 103 AC-FT 268700

14112500 LITTLE KLICKITAT RIVER NEAR WAHKIACUS, WA

LOCATION.--Lat 45°50'34", long 121°03'27", in SW¼SE¼ sec.9, T.4 N., R.14 E., Klickitat County, Hydrologic Unit 17070106, on right bank 450 ft (137 m) upstream from bridge on State Highway 142, 1.1 mi (1.8 km) downstream from Bowman Creek, 2.3 mi (3.7 km) northeast of Wahkiacus and at mile 0.4 (0.6 km).

DRAINAGE AREA.--280 mi² (725 km²).

PERIOD OF RECORD.-- November 1944 to current year. Monthly discharge only for some periods, published in WSP's 1318 and 1935.

REVISED RECORDS.--WSP 1248: Drainage area. WSP 1348: 1945(M), 1946, 1947(M), 1948.

GAGE.--Water-stage recorder. Datum of gage is 570.34 ft (173.840 m) above mean sea level (river-profile survey). Prior to Dec. 29, 1950, nonrecording gage and crest-stage indicator and Dec. 29, 1950 to Dec. 23, 1964, water-stage recorder at present site at datum 5.86 ft (1.786 m) higher. Dec. 24, 1964 to May 30, 1973, water-stage recorder at site 500 ft (152 m) downstream at present datum.

REMARKS.--Records good. Diversions above station for irrigation of 600 acres (2.4 km²). No regulation.

AVERAGE DISCHARGE.--31 years (water years 1946-76), 182 ft³/s (5.154 m³/s), 131,900 acre-ft/yr (163 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s (496 m³/s) Jan. 15, 1974, gage height, 17.58 ft (5.358 m), from rating curve extended above 2,600 ft³/s (73.6 m³/s) on basis of slope-area measurement at gage height 17.51 ft (5.337 m); minimum, 9.7 ft³/s (0.27 m³/s) Sept. 7, 8, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,200 ft³/s (34.0 m³/s) and maximum discharge, 1,800 ft³/s (51.0 m³/s) Dec. 4, gage height, 10.53 ft (3.210 m); minimum discharge, 27 ft³/s (0.76 m³/s) July 31, Aug. 1, Sept. 5, 6, 7; minimum gage height, 7.50 ft (2.286 m) July 31, Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	59	212	274	212	331	306	278	112	64	27	30
2	35	57	232	246	206	294	278	302	106	59	32	30
3	35	61	250	232	202	260	267	294	101	56	32	30
4	38	66	984	260	177	253	264	274	99	54	32	29
5	41	61	544	327	151	229	282	257	93	54	31	27
6	43	59	393	271	162	229	357	243	89	50	33	27
7	43	66	657	267	162	229	348	239	87	49	36	27
8	43	64	465	412	177	216	480	239	87	51	38	29
9	51	61	379	440	177	216	475	239	87	51	38	30
10	61	57	318	366	162	232	450	236	85	47	38	30
11	54	61	267	830	154	226	460	229	89	45	37	31
12	51	57	236	528	165	216	436	216	91	45	36	31
13	48	56	219	412	168	219	402	202	87	44	33	31
14	48	57	190	723	165	253	370	196	85	41	33	30
15	48	99	193	723	165	243	340	186	83	40	40	37
16	48	97	183	690	445	232	310	180	91	37	45	38
17	48	80	162	619	600	246	286	171	87	35	40	37
18	47	69	146	538	638	290	267	165	82	33	40	37
19	45	66	138	465	470	290	257	157	80	33	40	37
20	45	67	133	402	375	278	290	151	78	32	40	36
21	62	66	126	366	323	267	278	143	76	31	38	36
22	61	64	124	335	302	264	264	138	74	31	36	36
23	51	64	121	314	286	271	253	131	69	31	36	36
24	50	69	133	274	274	440	260	136	66	31	35	36
25	54	74	160	257	460	366	246	136	62	31	36	36
26	66	82	594	250	528	335	239	128	61	31	38	36
27	61	95	583	253	486	318	236	121	59	31	37	36
28	54	91	398	250	445	310	236	121	56	31	36	35
29	54	82	375	239	379	282	239	119	51	31	36	32
30	59	85	407	222	---	264	253	126	54	30	35	33
31	69	---	323	219	---	306	---	119	---	29	31	---
TOTAL	1548	2092	9645	12004	8616	8405	9429	5872	2427	1257	1115	986
MEAN	49.9	69.7	311	387	297	271	314	189	80.9	40.5	36.0	32.9
MAX	69	99	984	830	638	440	480	302	112	64	45	38
MIN	35	56	121	219	151	216	236	119	51	29	27	27
AC-FT	3070	4150	19130	23810	17090	16670	18700	11650	4810	2490	2210	1960

CAL YR 1975 TOTAL 81413 MEAN 223 MAX 1700 MIN 31 AC-FT 161500
WTR YR 1976 TOTAL 63396 MEAN 173 MAX 984 MIN 27 AC-FT 125700

14113000 KLICKITAT RIVER NEAR PITT, WA
(National Stream Quality Accounting Network Station)

LOCATION.--Lat 45°45'24", long 121°12'32", in SW¼ sec.8, T.3 N., R.13 E., Klickitat County, Hydrologic Unit 17070106, on left bank 2.8 mi (4.5 km) south of Pitt, 4.8 mi (7.7 km) southwest of Klickitat, 5.3 mi (8.5 km) upstream from Silvias Creek, and at mile 7.0 (11.3 km).

DRAINAGE AREA.--1,297 mi^{2} (3,359 km^{2}).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1909 to January 1912, October 1928 to current year. Published as "at Klickitat" 1909-12 and as "at Pitt" 1928-35.

REVISED RECORDS.--WSP 1348: 1910(M), 1929-33(M), 1934, 1935-38(M), 1940(M), 1942-43(M), 1946(M), 1948(M). WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 288.9 ft (88.06 m) above mean sea level (river-profile survey). July 3, 1909, to Jan. 31, 1912, nonrecording gage at site 7 mi (11 km) upstream at different datum. Oct. 1, 1928, to Sept. 30, 1935, nonrecording gage at site 3.5 mi (5.6 km) upstream at different datum.

REMARKS.--Records excellent. Several small diversions above station for irrigation of about 7,500 acres (30 km^{2}) mostly in vicinity of Glenwood. The largest of these is Hellroaring Irrigation Canal with a maximum flow of 74.5 ft^{3}/s (2.11 m^{3}/s) Aug. 13, 1974, which at times diverts the entire flow of Hellroaring Creek (tributary to Big Muddy Creek). No regulation.

AVERAGE DISCHARGE.--50 years (water years 1910-11, 1929-76), 1,635 ft^{3}/s (46.30 m^{3}/s), 1,185,000 acre-ft/yr (1,460 hm^{3}/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,400 ft^{3}/s (1,340 m^{3}/s) Jan. 15, 1974, gage height, 17.12 ft (5.218 m) from high-water mark in well, from rating curve extended above 13,000 ft^{3}/s (368 m^{3}/s) on basis of slope-area measurement at gage height 14.34 ft (4.371 m); minimum, 445 ft^{3}/s (12.6 m^{3}/s) Dec. 17, 1964, gage height, 3.62 ft (1.103 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft^{3}/s (113 m^{3}/s) and maximum (*):

Date	Time	Discharge (ft^{3}/s)	Discharge (m^{3}/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^{3}/s)	Discharge (m^{3}/s)	Gage height (ft)	Gage height (m)
Dec. 4	1445	*9,720	275	*9.47	2.886	Jan. 16	0415	4,210	119	7.04	2.146
Dec. 26	2230	4,260	121	7.17	2.185						

Minimum discharge, 824 ft^{3}/s (23.3 m^{3}/s) Oct. 1, gage height, 4.34 ft (1.323 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTORER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	839	1020	2060	2380	1830	2000	2180	2690	2070	1770	1190	995
2	846	1010	3980	2210	1790	2250	2070	3060	1940	1680	1150	976
3	867	1120	4410	2140	1760	2200	2020	3190	1860	1630	1160	955
4	912	1160	7630	2150	1680	2300	2040	3060	1800	1630	1130	952
5	889	1120	5400	2360	1440	2500	2130	2950	1780	1660	1110	951
6	882	1140	3720	2140	1470	2400	2450	2870	1750	1680	1120	952
7	873	1140	3910	2120	1510	2100	2520	2980	1780	1740	1220	920
8	859	1100	3670	2380	1560	1900	3260	3190	1880	1990	1260	896
9	920	1070	3450	2490	1570	1900	3600	3500	2070	2000	1210	890
10	1000	1060	3050	2340	1500	2000	3470	3710	2190	1750	1170	884
11	937	1040	2660	3350	1460	1950	3590	3530	2180	1640	1120	898
12	912	1100	2400	2940	1500	1850	3520	3260	2090	1600	1100	892
13	889	928	2210	2610	1530	1800	3270	3260	2030	1560	1090	880
14	874	1000	1980	3330	1520	1900	3100	3420	1920	1510	1080	886
15	882	1570	1960	3720	1480	1800	2970	3260	1890	1490	1110	946
16	882	1470	1870	4100	2050	1800	2740	3170	2050	1480	1180	923
17	896	1260	1730	3830	2540	1820	2610	3200	2360	1510	1080	908
18	912	1150	1630	3540	2870	2020	2470	2970	2340	1510	1040	904
19	904	1080	1560	3220	2620	2070	2360	2840	2350	1460	1020	901
20	937	1080	1490	2970	2340	2040	2540	2670	2380	1420	1020	909
21	977	1070	1430	2720	2150	2010	2480	2570	2230	1360	1030	910
22	985	1050	1420	2580	2040	2010	2380	2540	2110	1320	1020	909
23	955	1050	1430	2450	1960	2030	2280	2610	1970	1320	1010	898
24	930	1100	1490	2230	1940	2540	2290	2580	1870	1330	1020	889
25	969	1190	1600	2110	2000	2600	2230	2560	1820	1310	1040	882
26	1050	1200	2800	2070	2150	2520	2140	2440	1750	1270	1020	882
27	1000	1240	3440	2110	2080	2400	2160	2580	1690	1240	983	880
28	982	1190	2830	2150	2050	2340	2210	2620	1680	1200	971	880
29	1010	1100	2710	2040	2000	2180	2240	2450	1770	1180	972	889
30	1080	1110	2980	1940	---	2080	2390	2350	1830	1190	977	891
31	1080	---	2690	1870	---	2210	---	2200	---	1200	986	---
TOTAL	28930	33918	85590	80590	54390	65520	77710	90280	59430	46630	33589	27328
MEAN	933	1131	2761	2600	1876	2114	2590	2912	1981	1504	1084	911
MAX	1080	1570	7630	4100	2870	2600	3600	3710	2380	2000	1260	995
MIN	839	928	1420	1870	1440	1800	2020	2200	1680	1180	971	880
AC-FT	57380	67280	169800	159900	107900	130000	154100	179100	117900	92490	66620	54210

CAL YR 1975 TOTAL 738057 MEAN 2022 MAX 7630 MIN 831 AC-FT 1464000
WTR YR 1976 TOTAL 683905 MEAN 1869 MAX 7630 MIN 839 AC-FT 1357000

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

LOCATION.--At footbridge 250 ft (76 m) upstream from gaging station.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-70, 1973, 1975 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1950 to September 1970.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
OCT 22...	1315	968	76	8.0	6.9	1	43	10	--	31	0	6.0
NOV 25...	1000	1230	63	7.8	5.6	1	110	9	7	43	3	11
DEC 18...	1015	1650	69	7.6	1.7	4	30	5	5	28	0	6.9
JAN 15...	1000	3570	66	7.9	5.8	20	160	27	30	30	0	6.7
FEB 11...	0905	1460	70	7.5	2.5	2	47	10	5	32	0	6.9
MAR 18...	0935	2020	71	7.6	6.9	5	47	86	84	30	0	6.6
APR 15...	1020	3020	58	7.5	5.9	6	1	51	5	28	0	5.6
MAY 27...	0920	2590	57	7.7	11.3	1	67	12	17	21	0	4.9
JUN 17...	1050	2400	48	7.5	12.6	2	24	26	24	19	0	4.3
JUL 15...	0950	1500	54	7.1	12.8	3	20	7	4	23	0	5.3
AUG 19...	0955	1020	72	7.7	12.6	2	9	10	9	30	0	7.2
SEP 24...	0950	1000	77	7.8	11.1	2	30	6	22	30	0	6.5

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT 22...	3.9	4.3	1.6	45	37	.7	4.2	1.8	.3	27	68	71
NOV 25...	3.7	4.0	1.9	49	40	1.2	5.8	4.5	.1	28	54	83
DEC 18...	2.7	3.4	1.3	40	33	1.6	2.1	1.1	.1	24	56	61
JAN 15...	3.2	4.0	1.6	40	33	.8	2.9	1.8	.6	25	76	66
FEB 11...	3.6	3.8	1.5	45	37	2.3	2.1	.8	.1	27	70	68
MAR 18...	3.2	4.3	1.4	48	39	1.9	2.3	.8	.1	28	67	70
APR 15...	3.4	3.3	1.2	41	34	2.1	1.5	.7	.1	25	68	61
MAY 27...	2.2	2.6	1.0	32	26	1.0	1.6	.6	.1	22	54	51
JUN 17...	1.9	2.6	1.0	31	25	1.6	1.5	.8	.1	20	55	48
JUL 15...	2.4	3.1	1.2	37	30	4.7	3.9	.5	.1	23	53	58
AUG 19...	2.8	3.8	1.5	46	38	1.5	1.9	.6	.1	27	66	68
SEP 24...	3.4	4.0	1.6	39	32	1.0	5.3	1.0	.1	28	68	69

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL NONFILTRABLE RESIDUE (MG/L)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT 22...	--	--	.04	.00	.04	.03	.14	.05	.05	9	24	94
NOV 25...	--	--	.09	.00	.09	.04	.18	.05	.03	13	43	75
DEC 18...	--	--	.15	.00	.15	.02	.11	.04	.03	27	120	15
JAN 15...	--	--	.49	.01	.50	.19	.35	.12	.04	72	694	33
FEB 11...	--	--	.16	.00	.16	.02	.12	.04	.03	9	35	18
MAR 18...	--	--	.17	.01	.18	.04	.21	.05	.03	10	55	5
APR 15...	--	--	.36	.01	.37	.07	.17	.05	.03	51	416	17
MAY 27...	--	--	.01	.00	.01	.02	.14	.02	.02	17	119	29
JUN 17...	--	--	.00	.00	.00	.01	.13	.04	.02	25	162	24
JUL 15...	--	0	.03	.00	.03	.09	.34	.03	.01	11	45	52
AUG 19...	0	--	.01	.00	.01	.17	.53	.04	.01	6	17	82
SEP 24...	2	--	.00	.00	.00	.02	.09	.05	.03	8	22	92

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT 22...	1315	0	0	0	0	70	0	<50	0	0	3	150
JAN 15...	1000	0	0	<10	0	0	0	<50	0	10	2	2300
APR 15...	1020	7	0	<10	2	0	0	<50	2	10	6	790
JUL 15...	0950	0	1	<10	1	0	10	<50	0	<10	3	270

DATE	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT 22...	40	<100	2	6	0	.0	.0	0	0	10	5	6.9
JAN 15...	170	<100	3	30	0	.2	.0	0	0	60	0	3.3
APR 15...	110	<100	11	40	10	.0	.0	0	0	40	40	2.3
JUL 15...	90	<100	6	0	0	.0	.0	0	0	10	10	8.2

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2)		Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
		Dry weight	Ash weight				
Jan. 15	28	0.0	0.0	0.0	0.0	0.0	Polyethylene strip
July 15	28	10.5	8.31	3.47	0.000	640	

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

1.300 CELLS/ML

OCT. 22, 1975 1315 HOURS	_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	L ....M.ARCUS			0	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		46	3	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		46	3	
	....COCCONEIS		91	7	
	....RHOICOSPHENIA		140	10	
	...CYMBELLACEAE				
	D ....CYMBELLA		230	17	
	...DIATOMACEAE				
	....DIATOMA		91	7	
	...FRAGILARIACEAE				
	....ASTERIONELLA		180	14	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		46	3	
	...NAVICULACEAE	NAVICULOID			
	D ....NAVICULA		270	21	
	...NITZSCHIACEAE				
	....NITZSCHIA		180	14	
		TOTALS	1.300	99	3.069=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
ORDER 0.216
FAMILY 2.767
GENERA 3.069

SAMPLING METHOD - EDI

590 CELLS/ML

NOV. 25, 1975 1000 HOURS	_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....M.ARCUS		27	5	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		27	5	
	L ....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		27	5	
	....RHOICOSPHENIA		27	5	
	...CYMBELLACEAE				
	....CYMBELLA		80	14	
	....EPITHEMIA		27	5	
	...GOMPHONEMATACEAE				
	D ....GOMPHONEMA		130	23	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		80	14	
	...NITZSCHIACEAE				
	D ....NITZSCHIA		160	27	
		TOTALS	590	103	2.794=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
ORDER 0.530
FAMILY 2.556
GENERA 2.794

SAMPLING METHOD - EDI

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

13 CELLS/ML

DEC. 18, 1975
1015 HOURS

	_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....MELOSIRA		9	67	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....COCCONEIS		4	33	
	...GOMPHONEMATACEAE				
L	....GOMPHONEMA			0	
	...NAVICULACEAE	NAVICULOID			
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
	...TABELLARIACEAE				
L	....TABELLARIA			0	
		TOTALS	13	100	0.918=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
ORDER 0.918
FAMILY 0.918
GENERA 0.918
SAMPLING METHOD - EDI

280 CELLS/ML

JAN. 15, 1976
1000 HOURS

	_ORGANISM__NAME	_COMMON__NAME	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		12	4	
	....COCCONEIS		25	9	
	....RHOICOSPHENIA		25	9	
	...CYMBELLACEAE				
	....CYMBELLA		12	4	
	....EPITHEMIA		12	4	
	...DIATOMACEAE				
	....DIATOMA		12	4	
	...FRAGILARIACEAE				
D	....FRAGILARIA		62	22	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		25	9	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		37	13	
	...NITZSCHIACEAE				
D	....NITZSCHIA		62	22	
	...TABELLARIACEAE				
L	....TABELLARIA			0	
		TOTALS	280	100	3.046=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
FAMILY 2.629
GENERA 3.046
SAMPLING METHOD - EDI

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

190 CELLS/ML

FEB. 11, 1976
0905 HOURS

	_ORGANISM__NAME_____________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
L	....H.ARCUS			0	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		15	8	
	....COCCONEIS		15	8	
	....RHOICOSPHENIA		15	8	
	...CYMBELLACEAE				
	....CYMBELLA		15	8	
	...DIATOMACEAE				
	....DIATOMA		15	8	
	...FRAGILARIACEAE				
	....FRAGILARIA		15	8	
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		59	31	
	...MERIDIONACEAE				
L	....MERIDION			0	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		30	15	
	...NITZSCHIACEAE				
	....NITZSCHIA		15	8	
		TOTALS	190	102	2.931=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
FAMILY 2.565
GENERA 2.931

SAMPLING METHOD - EDI

670 CELLS/ML

MAR. 18, 1976
0935 HOURS

	_ORGANISM__NAME_____________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
L	....CHLAMYDOMONAS			0	
	...HAEMATOCOCCACEAE				
	....HAEMATOCOCCUS		38	6	
		TOTALS	38	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		25	4	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		110	17	
	....COCCONEIS		25	4	
	....RHOICOSPHENIA		38	6	
	...CYMBELLACEAE				
	....CYMBELLA		25	4	
	...DIATOMACEAE				
	....OPEPHORA		25	4	
	...FRAGILARIACEAE				
	....FRAGILARIA		63	9	
	....SYNEDRA		38	6	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		160	25	
	...MERIDIONACEAE				
L	....MERIDION			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		38	6	
	...NITZSCHIACEAE				
	....NITZSCHIA		76	11	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	630	96	3.123=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.314
CLASS 0.314
ORDER 0.542
FAMILY 2.776
GENERA 3.260

SAMPLING METHOD - EDI

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

650 CELLS/ML

APR. 15, 1976 1020 HOURS		_ORGANISM__NAME_	_COMMON__NAME_	CELLS/ML	PER_CENT	
		CHLOROPHYTA	GREEN ALGAE			
		.CHLOROPHYCEAE				
		..CHLOROCOCCALES				
		...OOCYSTACEAE				
		....ANKISTRODESMUS		18	3	
			TOTALS	18	3	0.000=DIVERSITY
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..CENTRALES	CENTRIC			
		...COSCINODISCACEAE				
		....MELOSIRA		18	3	
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
	D	....ACHNANTHES		160	24	
		....COCCONEIS		35	5	
		....RHOICOSPHENIA		18	3	
		...CYMBELLACEAE				
	L	....CYMBELLA			0	
		...FRAGILARIACEAE				
		....FRAGILARIA		18	3	
		....SYNEDRA		18	3	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		71	11	
		...MERIDIONACEAE				
	L	....MERIDION			0	
		...NAVICULACEAE	NAVICULOID			
	D	....NAVICULA		210	32	
		...NITZSCHIACEAE				
		....NITZSCHIA		88	14	
		...SURIRELLACEAE				
	L	....SURIRELLA			0	
			TOTALS	640	98	2.582=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
PHYL/DIV 0.179
CLASS 0.179
ORDER 0.357
FAMILY 2.300
GENERA 2.642

SAMPLING METHOD - EDI

550 CELLS/ML

MAY 27, 1976 0920 HOURS		_ORGANISM__NAME_	_COMMON__NAME_	CELLS/ML	PER_CENT	
		CHRYSOPHYTA				
		.BACILLARIOPHYCEAE	DIATOMS			
		..PENNALES	PENNATE			
		...ACHNANTHACEAE				
		....COCCONEIS		38	7	
		....RHOICOSPHENIA		19	3	
		...CYMBELLACEAE				
		....CYMBELLA		38	7	
		...EUNOTIACEAE				
		....EUNOTIA		57	10	
		...FRAGILARIACEAE				
		....SYNEDRA		76	14	
		...GOMPHONEMATACEAE				
		....GOMPHONEMA		57	10	
		...NAVICULACEAE	NAVICULOID			
	D	....NAVICULA		190	34	
		....NEIDIUM		19	3	
		....STAURONEIS		19	3	
		...NITZSCHIACEAE				
		....NITZSCHIA		19	3	
		...SURIRELLACEAE				
		....SURIRELLA		19	3	
			TOTALS	550	97	2.971=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
FAMILY 2.538
GENERA 2.971

SAMPLING METHOD - EDI

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14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

990 CELLS/ML

JUNE 17, 1976
1050 HOURS

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		60	6	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		79	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		180	18	
	...CYMBELLACEAE				
	....CYMBELLA		120	12	
	...EUNOTIACEAE				
	....EUNOTIA		60	6	
	...FRAGILARIACEAE				
	....SYNEDRA		60	6	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		120	12	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		79	8	
	...NITZSCHIACEAE				
D	....NITZSCHIA		220	22	
	...SURIRELLACEAE				
	....SURIRELLA		20	2	
		TOTALS	990	100	3.087=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
ORDER 0.722
FAMILY 3.087
GENERA 3.087

SAMPLING METHOD - EDI

570 CELLS/ML

JULY 15, 1976
0950 HOURS

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		11	2	
	...ACHNANTHACEAE				
D	....ACHNANTHES		120	22	
	....COCCONEIS		22	4	
	....RHOICOSPHENIA		11	2	
	...CYMBELLACEAE				
	....CYMBELLA		11	2	
	...DIATOMACEAE				
	....DIATOMA		11	2	
	...FRAGILARIACEAE				
	....SYNEDRA		11	2	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		100	18	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		56	10	
	...NITZSCHIACEAE				
D	....NITZSCHIA		210	37	
		TOTALS	570	101	2.517=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER . 200-X MICROSCOPE
DIVERSITY INDICES. BASED ON ACTUAL COUNTS:
FAMILY 2.258
GENERA 2.517

SAMPLING METHOD - EDI

14113000 KLICKITAT RIVER NEAR PITT, WA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

IDENTIFICATION OF PHYTOPLANKTON

780 CELLS/ML

AUG. 19, 1976 0955 HOURS	_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		63	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		35	5	
	....COCCONEIS		38	5	
	....RHOICOSPHENIA		25	3	
	...CYMBELLACEAE				
	....CYMBELLA		50	6	
	....RHOPALODIA		13	2	
	...DIATOMACEAE				
	....DIATOMA		38	5	
	...FRAGILARIACEAE				
	....SYNEDRA		50	6	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		75	10	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		38	5	
	...NITZSCHIACEAE				
	....NITZSCHIA		88	11	
		TOTALS	510	66	3.314=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	D ....ANABAENA		260	34	
		TOTALS	260	34	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
PHYL/DIV 0.924
CLASS 0.924
ORDER 1.277
FAMILY 2.855
GENERA 3.115

SAMPLING METHOD - EDI

220 CELLS/ML

SEPT. 24, 1976 0950 HOURS	_ORGANISM__NAME_______________	_COMMON__NAME______	CELLS/ML	PER_CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		16	8	
	....COCCONEIS		13	6	
	....RHOICOSPHENIA		20	9	
	...CYMBELLACEAE				
	....AMPHORA		3	2	
	....CYMBELLA		16	8	
	....EPITHEMIA		3	2	
	...DIATOMACEAE				
	....DIATOMA		23	11	
	...FRAGILARIACEAE				
	....SYNEDRA		7	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		16	8	
	...NAVICULACEAE	NAVICULOID			
	....FRUSTULIA		3	2	
	D ....NAVICULA		39	18	
	...NITZSCHIACEAE				
	D ....NITZSCHIA		56	26	
		TOTALS	220	103	3.128=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
FAMILY 2.573
GENERA 3.128

SAMPLING METHOD - EDI

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained and discharge measurements may have been made for purposes of establishing the stage-discharge relation. but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area mi^2 (km^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
		Pend Oreille River basin					
12396000	Calispell Creek near Dalkena, Wash.	Lat 48°14'40", long 117°20'26", in NE¼SW¼ sec.26, T.32 N., R.43 E., Pend Oreille County, 2.4 mi (3.9 km) upstream from Calispell Lake, and 4.8 mi (7.7 km) west of Dalkena.	68.3 (177)	1950-73‡, 1974-	5-11-76	6.73	275
12396100	Winchester Creek near Cusick, Wash.	Lat 48°16'52", long 117°21'44", in NW¼ sec.15, T.32 N., R.43 E., Pend Oreille County, at county road around Calispell Lake and 4.8 mi (7.7 km) southwest of Cusick.	16.8 (43.5)	1954-	5-11-76	10.29	66
		Deep Creek basin					
12399600	Deep Creek near Northport, Wash.	Lat 48°55'47", long 117°44'59", in SE¼NW¼ sec.34, T.40 N., R.40 E., Stevens County, on left bank 0.5 mi (0.8 km) upstream from mouth, 2.0 mi (3.2 km) northeast of Northport.	191 (495)	1972-75‡	5-11-76	4.42	822
		Colville River basin					
12407520	Deer Creek near Valley, Wash.	Lat 48°07'06", long 117°47'52", in NW¼NW¼ sec.8, T.30 N., R.40 E., Stevens County, on left bank at downstream side of county road bridge, 2.0 mi (3.2 km) upstream from confluence with Sheep Creek, 5 mi (8.0 km) southwest of Valley, and at river mile 2.0 (3.2 km).	36.0 (93.2)	1959-72‡, 1973-	2-16-76	2.59	125
12408300	Little Pend Oreille River near Colville, Wash.	Lat 48°27'58", long 117°44'53", in NW¼NW¼ sec.10, T.34 N., R.40 E., Stevens County, on right bank 320 ft (98 m) upstream from abandoned railroad bridge, 0.5 mi (0.8 km) downstream from Bear Creek, 6.2 mi (10.0 km) east of Arden, 9.2 mi (14.8 km) southeast of Colville, and at mile 7.0 (11.3 km).	132 (342)	1957-75‡	5-12-76	3.48	353
12408420	Haller Creek near Arden, Wash.	Lat 48°28'02", long 117°54'24", in SW¼SW¼ sec.4, T.34 N., R.39 E., Stevens County, 10 ft (3 m) downstream from county road bridge, 1.5 mi (2.4 km) northwest of Arden.	37.0 (95.8)	1959-70‡, 1971-	2-16-76	1.64	26
12408500	Mill Creek near Colville, Wash.	Lat 48°34'44", long 117°51'56", in SW¼NW¼ sec.35, T.36 N., R.39 E., Stevens County, on right bank 3.0 mi (4.8 km) northeast of Colville, 5.3 mi (8.5 km) downstream from North Fork, and at mile 10.9 (17.5 km).	83.0 (215)	1939-72‡, 1973-	5-12-76	3.86	255
		Spokane River basin					
12423550	Hangman Creek tributary near Latah, Wash. (discontinued)	Lat 47°19'16", long 117°10'42", in SE¼ sec.12, T.21 N., R.44 E., Spokane County, at State Highway 27, 3 mi (4.8 km) north of Latah.	2.18 (5.65)	1961-76	1-16-76	8.67	44
12423700	South Fork Rock Creek tributary near Fairfield, Wash. (discontinued)	Lat 47°20'54", long 117°04'06", in SE¼SE¼ sec.35, T.22 N., R.45 E., Spokane County, at Truax Road, 5.5 mi (8.8 km) southeast of Fairfield.	.59 (1.53)	1962-76	1-16-76	9.69	24
12427000	Little Spokane River at Elk, Wash.	Lat 48°01'20", long 117°16'19", in NW¼SE¼ sec.8, T.29 N., R.44 E., Spokane County, 0.6 mi (1.0 km) upstream from and northeast of Elk.	115 (298)	1948-71‡, 1972-	4-14-76	1.60	90
12431100	Little Creek at Dartford, Wash.	Lat 47°47'05", long 117°25'00", in NE¼ sec.6, T.26 N., R.43 E., Spokane County, at junction of Hazard and Dartford Roads at Dartford, and 0.2 mi (0.3 km) above mouth.	11.9 (30.8)	1963-	12-27-75	14.89	237
		Hawk Creek basin					
12433580	Cottonwood Creek (formerly Hawk Creek) at Davenport, Wash.	Lat 47°39'22", long 118°08'17", in NW¼NW¼ sec.22, T.25 N., R.37 E., Lincoln County, at old U.S. Highway 2, at east edge of Davenport.	23.2 (60.1)	1957, 1959, 1963-	12-26-75	13.38	780
		Sanpoil River basin					
12433890	Sanpoil River above Thirteenmile Creek, near Republic, Wash.	Lat 48°28'38", long 118°43'41", in SE¼NW¼ sec.1, T.34 N., R.32 E., Ferry County, Colville Indian Reservation, on right bank downstream wingwall of bridge on State Highway 21, 25 ft (7.6 m) upstream from Thirteenmile Creek, 2.1 mi (3.4 km) upstream from West Fork Sanpoil River, 11.8 mi (19.0 km) south of Republic and at mile 45.5 (73.2 km).	263 (681)	1972-74‡, 1975-	4-16-76	3.90	525
12433930	Bailey Creek near Aeneas, Wash.	Lat 48°33'48", long 119°01'58", in NE¼SW¼ sec.2, T.35 N., R.30 E., Okanogan County, at county road crossing, 0.8 mi (1.3 km) upstream from mouth and 3.0 mi (4.8 km) northwest of Aeneas.	8.04 (20.8)	1974-	5- 2-76	>6.49& <7.05	e 6

‡ Operated as continuous-record gaging station.
> More than.
< Less than.
e Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area mi^2 (km^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
		Sanpoil River basin--Continued					
12434110	West Fork Sanpoil River near Republic, Wash.	Lat 48°27'33", long 118°44'57", in NE¼SW¼ sec.11, T.34 N., R.32 E., Ferry County, Colville Indian Reservation, on upstream left-bank wingwall of bridge on State Highway 21, 13.9 mi (22.4 km) south of Republic, and at mile 0.5 (0.8 km).	308 (798)	1972-74‡, 1975-	5-11-76	2.79	95
12434300	Bridge Creek near Keller, Wash.	Lat 48°14'25", long 118°35'49", in SE¼SW¼ sec.25, T.32 N., R.33 E., Ferry County, at road crossing 6 mi (9.7 km) above mouth and 12 mi (19.3 km) northeast of Keller.	18.4 (47.7)	1971-	3-10-76	9.24	43
12434500	Sanpoil River near Keller, Wash.	Lat 48°06'26", long 118°41'51", in NE¼NE¼ sec.18, T.30 N., R.33 E., Ferry County, Colville Indian Reservation, on right bank, 0.3 mi (0.5 km) upstream from Brush Creek, 2.2 mi (3.5 km) north of Keller, and at mile 14.1 (22.7 km).	880 (2,279)	1952-55‡, 1956-59, 1972-74‡, 1975-	4-16-76	6.14	1,280
12434600	Jack Creek at Keller, Wash.	Lat 48°04'54", long 118°41'18", in SW¼SW¼ sec.20, T.30 N., R.33 E., Ferry County, at State Highway 21, 0.2 mi (0.3 km) above mouth and 0.4 mi (0.6 km) northwest of Keller.	8.17 (21.2)	1971-	1-16-76	5.67	21
		Nespelem River basin					
12436850	Parmenter Creek near Nespelem, Wash.	Lat 48°15'06", long 118°58'47", in SE¼SE¼ sec.24, T.32 N., R.30 E., Okanogan County, at road crossing 0.5 mi (0.8 km) upstream from mouth and 6.0 mi (9.7 km) north of Nespelem.	6.94 (18.0)	1974-	4- 6-76	7.37	13
12437505	Nespelem River below millpond, at Nespelem, Wash.	Lat 48°09'55", long 118°58'46", on south line, SE¼SE¼ sec.24, T.31 N., R.30 E., Okanogan County, Colville Indian Reservation, on left bank on upstream wingwall of county bridge, at Nespelem, 0.2 mi (0.3 km) downstream from millpond, and 3.9 mi (6.3 km) upstream from Little Nespelem River.	123 (319)	1972-74‡, 1975-	4- 7-76	5.76	1,260
		Foster Creek basin					
12437930	East Fork Foster Creek at Leahy, Wash.	Lat 47°54'52", long 119°23'00", in NE¼NE¼ sec.23 (rev) T.28 N., R.27 E., Douglas County, at State Highway 17, 0.5 mi (0.8 km) southeast of Leahy.	35.4 (91.7)	1959, 1963-	2-12-75 3-11-76	12.44 12.45	*65 100
12437950	East Fork Foster Creek tributary near Bridgeport, Wash.	Lat 47°57'00", long 119°37'50", in SE¼ sec.1, T.28 N., R.25 E., Douglas County, at State Highway 17, 3.5 mi (5.6 km) southeast of Bridgeport.	4.75 (12.3)	1957-	3-11-76	4.56	22
12437960	West Fork Foster Creek near Bridgeport, Wash.	Lat 47°53'05", long 119°42'50", near center of N½ sec.32, T.28 N., R.25 E., Douglas County, at road crossing, 4 mi (6.4 km) above Middle Fork and 8 mi (12.9 km) south of Bridgeport.	28.0 (72.5)	1957, 1963-	3-11-76	13.57	78
		Okanogan River basin					
12439200	Dry Creek tributary near Molson, Wash.	Lat 48°54'53", long 119°12'44", in NE¼ sec.6, T.39 N., R.29 E., Okanogan County, 4.5 mi (7.2 km) south of Molson and 10 mi (16.1 km) east of Oroville.	1.68 (4.35)	1958-	1-16-74 4-15-75 3-17-76	7.83 8.12 8.11	*22 *30 28
12442000	Toats Coulee Creek near Loomis, Wash.	Lat 48°50'01", long 119°41'32", in NE¼SE¼ sec.33, T.39 N., R.25 E., Okanogan County, 600 ft (183 m) upstream from Deer Creek, 1,800 ft (549 m) upstream from intake of Whitestone Irrigation Canal and 2.8 mi (4.5 km) northwest of Loomis.	130 (337)	1920-26‡, 1957-70‡, 1971-	5-10-76	3.90	380
12443700	Spectacle Lake tributary near Loomis, Wash. (discontinued)	Lat 48°48'37", long 119°33'10", in SE¼NW¼ sec.10, T.38 N., R.26 E., Okanogan County, at county road 4 mi (6.4 km) east of Loomis.	4.59 (11.9)	1961-76	5- 1-76	6.84	9.1
12444400	Siwash Creek tributary near Tonasket, Wash.	Lat 48°43'12", long 119°22'12", in NE¼ sec.12, T.37 N., R.27 E., Okanogan County, at county road 3.2 mi (5.1 km) northeast of Tonasket.	.66 (1.71)	1957, 1959-	3-17-76	7.83	9
12445900	Omak Creek near Omak, Wash.	Lat 48°22'02", long 119°26'38", in NE¼NW¼ sec.16, T.33 N., R.27 E., Okanogan County, Colville Indian Reservation, on right bank downstream wingwall of county highway bridge, 1.3 mi (2.1 km) upstream from Mission Creek, and 3.9 mi (6.3 km) southeast of Omak.	119 (308)	1972-74‡	6- 3-75 3-31-76	3.60 2.24	c487 102
12445920	Karter Creek above Nelson Creek near Omak, Wash.	Lat 48°13'16", long 119°16'08", in NE¼NW¼ sec.2, T.31 N., R.28 E., Okanogan County, Colville Indian Reservation, 10 mi (16.1 km) southwest of Disautel, 1.6 mi (2.57 km) southeast of Omak Lake, 17.4 mi (28.0 km) southeast of Okanogan.	-	1975-	3-31-76	9.72	12
12447270	Summit Creek near Malott, Wash.	Lat 48°22'34", long 119°46'10", in SW¼NW¼ sec.12, T.33 N., R.24 E., Okanogan County, at road crossing, 0.4 mi (0.6 km) upstream from Loup Loup Creek, and 7.0 mi (11.3 km) northwest of Malott.	17.4 (45.1)	1974-	3-10-76	11.77	14
		Methow River basin					
12447380	Pine Creek near Mazama, Wash.	Lat 48°34'48", long 120°37'33", in NE¼ sec.32, T.36 N., R.18 E., Okanogan County, at State Highway 20, 10 mi (16.1 km) west of Mazama.	4.63 (12.0)	1966-	6-19-76	19.29	100

‡ Operated as continuous-record gaging station.
* Revised.
c Not previously published.

Annual maximum discharge at crest-stage partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area mi^2 (km^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
		Methow River basin--Continued					
12449910	Methow River tributary No. 2 near Methow, Wash.	Lat 48°04'24", long 119°59'43", in SE¼NE¼ sec.30, T.30 N., R.23 E., Okanogan County, at State Highway 153, 4.2 mi (6.8 km) south of Methow.	1.00 (2.59)	1970-	1976	-	††
		Antoine Creek basin					
12450720	Antoine Creek near Azwell, Wash.	Lat 47°55'32", long 119°54'07", in E½ sec.18, T.28 N., R.32 E., Chelan County, at U.S. Highway 97 crossing, 0.9 mi (1.4 km) upstream from mouth, and 1.5 mi (2.4 km) southwest of Azwell.	35.6 (92.2)	1974-	2-29-76	17.57	15
		Wenatchee River basin					
12455000	Wenatchee River below Wenatchee Lake, Wash.	Lat 47°48'30", long 120°43'20", in sec.28, T.27 N., R.17 E., on left bank 0.1 mi (0.2 km) downstream from lake outlet, 4.8 mi (7.7 km) northwest of Plain, and 17 mi (27 km) northwest of Leavenworth.	273 (707)	1932-58‡, 1959-	12- 4-75	79.30	13,000
12458000	Icicle Creek above Snow Creek near Leavenworth, Wash.	Lat 47°32'28", long 120°43'08", in SE¼SE¼ sec.28, T.24 N., R.17 E., Chelan County, 1,000 ft (305 m) upstream from Icicle Canal diversion dam and 4.8 mi (7.7 km) southwest of Leavenworth.	193 (500)	1936-71‡, 1973-	12- 4-75	13.30	9,250
12461200	East Branch Mission Creek tributary near Cashmere, Wash.	Lat 47°22'50", long 120°29'20", in SW¼ sec.20, T.22 N., R.19 E., Chelan County, at U.S. Forest Service road, 9.7 mi (15.6 km) south of Cashmere.	2.49 (6.45)	1955-	12- 2-75	12.00	14
12461400	Mission Creek above Sand Creek near Cashmere, Wash.	Lat 47°25'48", long 120°30'28", in SW¼NE¼ sec.6, T.22 N., R.19 E., Chelan County, 400 ft (122 m) upstream from Sand Creek, 7.0 mi (11.3 km) south of Cashmere.	39.8 (103)	1959-71‡, 1972-	12- 2-75	4.66	670
		Dry Gulch basin					
12462610	Dry Gulch near Malaga, Wash.	Lat 47°18'38", long 120°05'47", in SE¼NE¼ sec.17, T.21 N., R.22 E., Chelan County, at Colockum road, 0.4 mi (0.6 km) above mouth and 6.2 mi (10.0 km) southeast of Malaga.	12.0 (31.1)	1971-	3-27-76	16.57	131
		Colockum Creek basin					
12462630	Colockum Creek tributary near Malaga, Wash.	Lat 47°15'54", long 120°10'56", in SW¼SE¼ sec.34, T.21 N., R.21 E., Chelan County, at Colockum road 6.7 mi (10.8 km) south of Malaga.	0.49 (1.27)	1971-	3-26-76	6.98	1.2
		Douglas Creek basin					
12462800	Moses Creek at Douglas, Wash.(discontinued)	Lat 47°37'03", long 120°00'27", in NE¼SE¼ sec.36, T.25 N., R.22 E., Douglas County, at county road, 0.3 mi (0.5 km) southeast of Douglas.	15.4 (39.9)	1955, 1957-76	4- 6-76	13.38	110
12463600	Rattlesnake Creek tributary near Soap Lake, Wash.	Lat 47°26'30", long 119°35'45", in SW¼ sec.32, T.23 N., R.26 E., Douglas County, at county road, 6 mi (9.7 km) northwest of Soap Lake.	2.22 (5.75)	1959, 1961-	2-16-76	6.80	5.5
12463700	McCarteney Creek tributary near Farmer, Wash. (discontinued)	Lat 47°37'48", long 119°44'38", in SW¼ sec.30, T.25 N., R.25 E., Douglas County, at county road 3.5 mi (5.6 km) northeast of Farmer.	[b].4 (1.0)	1960, 1962-76	8- 6-76	12.17	114
12463800	Pine Canyon tributary near Farmer, Wash. (discontinued)	Lat 47°38'51", long 119°48'50", on line between sec.21 & 22, T.25 N., R.24 E., Douglas County at county road, 2.5 mi (4.0 km) north of Farmer.	1.10 (2.85)	1960, 1962-76	8- 6-76	11.41	29
		Crab Creek basin					
12464780	Crab Creek above Sylvan Lake, near Lamona, Wash.	Lat 47°18'33", long 118°29'55", in NE¼SW¼ sec.14, T.21 N., R.34 E., Lincoln County, on right bank 2.0 mi (3.2 km) upstream from Sylvan Lake, 25 ft (7.6 m) downstream from concrete dam, and 3.5 mi (5.6 km) south of Lamona.	542 (1,404)	1972-74‡, 1975-	2-16-76	11.24	1,940
12464800	Coal Creek at Mohler, Wash.	Lat 47°24'25", long 118°19'04", in SE¼SE¼ sec.7, T.22 N., R.36 E., Lincoln County, on left bank 25 ft (7.6 m) upstream from bridge on county road, 0.3 mi (0.5 km) east of Mohler, and 15 mi (24.1 km) upstream from mouth.	64.7 (167.6)	1963-74‡, 1975-	2-16-76	3.30	705
12464810	Crab Creek below Sylvan Lake, near Odessa, Wash.	Lat 47°19'18", long 118°36'25", in SE¼SW¼ sec.12, T.21 N., R.33 E., Lincoln County, on left bank at downstream side of county road bridge, 2,000 ft (610 m) downstream from Sylvan Lake, and 4.0 mi (6.4 km) east of Odessa.	686 (1,777)	1972-74‡, 1975-	2-16-76	6.92	2,450
12465100	Connawai Creek tributary near Govan, Wash.	Lat 47°36'58", long 118°45'40", in SW¼SW¼ sec.34, T.25 N., R.32 E., Lincoln County, at county road, 0.2 mi (0.3 km) north of State Highway 21 and 9 mi (14.5 km) south of Govan.	.25 (0.65)	1958-	2-16-76	5.75	1

‡ Operated as continuous-record gaging station.
†† No evidence of flow.
[b] Approximately.

Annual maximum discharge at crest-stage partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area mi^2 (km^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Crab Creek basin--Continued					
12465400	Wilson Creek below Corbett Draw near Almira, Wash.	Lat 47°39'47", long 118°55'46", in SW¼NW¼ sec.16, T.25 N., R.31 E., Lincoln County, 65 ft (20 m) downstream from Corbett Draw and 3.5 mi (5.6 km) south of Almira.	327 (847)	1969-71‡, 1972-	8- 6-76	7.65	3,170
12465500	Wilson Creek at Wilson Creek, Wash.	Lat 47°25'50", long 119°06'10", in SW¼NW¼ sec.6, T.22 N., R.30 E., Grant County, 1.0 mi (1.6 km) northeast of town of Wilson Creek and at mile 1.0 (1.6 km).	427 (1,106)	1951-57‡, 1958-73‡, 1974-	2-16-76	9.36	1,790
12467400	Haynes Canyon (formerly Grand Coulee tributary) near Coulee City, Wash. (discontinued)	Lat 47°38'46", long 119°21'22", in NE¼SW¼ sec.19, T.25 N., R.28 E., Douglas County, at old road, 200 ft (61 m) east of State Highway 17, 1.5 mi (2.4 km) north of U.S. Highway 2 and 4.5 mi (7.2 km) northwest of Coulee City.	^{b}2.7 (7.0)	1959-76	3-10-76	10.42	7.5
12470300	Iron Springs Creek near Winchester, Wash. (discontinued)	Lat 47°20'00", long 119°42'12", on east line of NE¼ sec.8, T.21 N., R.25 E., Grant County, at county road 6 mi (9.7 km) north of Winchester and 7 mi (11.3 km) west of Ephrata.	1.57 (4.07)	1959-76	2-16-76	5.78	7.0
12471100	Paha Coulee tributary near Ritzville, Wash. (discontinued)	Lat 47°03'03", long 118°25'26", in sec.16, T.18 N., R.35 E., Adams County, at U.S. Highway 395, 6 mi (9.7 km) southwest of Ritzville.	8.52 (22.1)	1962-76	12-26-75	9.10	93
12471200	Lind Coulee tributary near Lind, Wash.	Lat 47°57'22", long 118°36'00", in NE¼NE¼ sec.24, T.17 N., R.33 E., Adams County, at old U.S. Highway 395, 1.3 mi (2.1 km) southeast of Lind.	.21 (.54)	1956, 1961-	12-26-75	7.27	9.9
12471270	Farrier Coulee near Schrag, Wash.	Lat 47°07'33", long 118°50'17", in SW¼NE¼ sec.19, T.19 N., R.32 E., Adams County, on left bank 3.8 mi (6.1 km) upstream from confluence with Bauer Coulee, and 3.7 mi (5.0 km) north of Schrag.	42.0 (109)	1963-74‡, 1975-	1- 5-76	3.20	39
		Scooteney Reservoir basin					
12473710	Kansas No. 2 tributary near Cunningham, Wash.	Lat 46°49'26", long 118°56'35", on line between sec.32, T.16 N., and sec.5, T.15 N., R.31 E., Adams County, at county road, 0.9 mi (1.4 km) above mouth and 6.5 mi (10.5 km) west of Cunningham.	3.31 (8.57)	1971-	1976	--	††
		Yakima River basin					
12474700	Mosquito Creek near Easton, Wash.	Lat 47°17'32", long 121°19'23", in SE¼ sec.22, T.21 N., R.12 E., Kittitas County, at Forest Service road, 2 mi (3.2 km) southeast of Keechelus Dam and 8 mi (12.9 km) northwest of Easton.	1.07 (2.77)	1968-	12- 2-75	18.26	128
12475300	Box Canyon tributary near Easton, Wash.	Lat 47°22'57", long 121°15'42", near center of sec.19, T.22 N., R.13 E., Kittitas County, at Forest Service road 2.5 mi (4.0 km) north of Kachess Guard Station, and 11 mi (17.7 km) northwest of Easton.	.36 (.93)	1969-	12- 2-75	9.04	51
12479600	Thornton Creek near Cle Elum, Wash.	Lat 47°09'22", long 120°51'34", in SE¼NE¼ sec.8, T.19 N., R.16 E., Kittitas County, at county road 0.8 mi (1.3 km) upstream from mouth and 4.5 mi (7.2 km) southeast of Cle Elum.	.66 (1.71)	1971-	12- 2-75	5.18	^{e}.9
12480000	Teanaway River below Forks, near Cle Elum, Wash.	Lat 47°14'48", long 120°51'36", in NE¼NE¼ sec.8, T.20 N., R.16 E., Kittitas County, 0.4 mi (0.6 km) downstream from North Fork, and 5.0 mi (8.0 km) northeast of Cle Elum.	172 (445)	1911-12‡, 1968-73‡, 1974-	12- 4-75	8.07	5,420
12484600	McPherson Canyon at Wymer, Wash.	Lat 46°50'03", long 120°27'12", in SW¼NE¼ sec.33, T.16 N., R.19 E., Kittitas County, at U.S. Highway 97, 0.5 mi (0.8 km) northeast of Wymer.	5.48 (14.2)	1952, 1955-	1976	--	††
12485900	Pine Canyon near Naches, Wash. (discontinued)	Lat 46°49'11", long 120°40'16", in SW¼NW¼ sec.2, T.15 N., R.17 E., Yakima County, at county road, 6.5 mi (10.5 km) northeast of Naches.	2.26 (5.85)	1961-76	2-16-76	17.96	6.0
12491700	Hause Creek near Rimrock, Wash.	Lat 46°40'33", long 121°04'49", in NE¼ sec.28, T.14 N., R.14 E., Yakima County, at State Highway 14, 0.1 mi (0.2 km) west of Tieton Ranger Station and 2.5 mi (4.0 km) east of Rimrock.	3.91 (10.1)	1955-	12- 2-75	6.89	37
12500400	Firewater Canyon near Moxee City, Wash.	Lat 46°30'14", long 120°08'37", in NW¼NW¼ sec.25, T.12 N., R.21 E., Yakima County, at State Highway 24, 12 mi (19.3 km) southeast of Moxee City.	7.30 (18.9)	1963-	8- 6-76	6.96	66
12506800	North Medicine Creek near White Swan, Wash.	Lat 46°26'53", long 120°48'09", in SW¼SE¼ sec.10, T.11 N., R.16 E., Yakima County, at county road crossing 6.9 mi (11.1 km) upstream from mouth, and 7.1 mi (11.4 km) northwest of White Swan.	1.53 (3.96)	1974-	1976	--	††
12507660	Satus Creek tributary near Toppenish, Wash.	Lat 46°05'27", long 120°32'57", in NW¼SW¼ sec.15, T.7 N., R.18 E., Yakima County, on U.S. Highway 97, 23 mi (37.0 km) south of Toppenish.	8.54 (22.1)	1953, 1956, 1961, 1963-	12- 4-75	39.62	86
12509800	Snipes Creek tributary near Benton City, Wash.	Lat 46°20'15", long 119°39'30", in NW¼SW¼ sec.23, T.10 N., R.25 E., Benton County, at Sharp Road 10 mi (16.1 km) northwest of Benton City.	5.18 (13.4)	1965, 1967-	2-26-76	11.66	36

†† No evidence of flow.
‡ Operated as continuous-record gaging station.

b Approximately.
e Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area mi^2 (km^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Esquatzel Coulee basin					
12512600	Hatton Coulee tributary No. 2 near Cunningham, Wash. (discontinued)	Lat 46°49'24", long 118°41'49", in SE¼SE¼ sec.32, T.16 N., R.33 E., Adams County, at county road crossing, 5 mi (8.0 km) east of Cunningham.	2.44 (6.32)	1961-76	1976	---	††
12513300	Dunnigan Coulee near Connell, Wash.	Lat 46°34'39", long 118°51'26", in SE¼SE¼ sec.25, T.13 N., R.31 E., Franklin County, on U.S. Highway 395, about 6 mi (9.7 km) south of Connell.	27.1 (70.2)	1956, 1963-	1976	---	††
		Tenmile Creek basin					
13334400	Mill Creek at Anatone, Wash.	Lat 46°08'04", long 117°07'51", in SW¼SE¼ sec.26, T.8 N., R.45 E., Asotin County, at county road in Anatone.	2.74 (7.10)	1971-	3-19-76	8.81	52
		Asotin Creek basin					
13334900	Pintler Creek near Anatone, Wash.	Lat 46°07'59", long 117°09'56", in NE¼NE¼ sec.33, T.8 N., R.45 E., Asotin County, at county road 1.7 mi (2.7 km) west of Anatone.	0.86 (2.23)	1971-	3-18-76	9.48	20
		Critchfield Draw basin					
13335200	Critchfield Draw near Clarkston, Wash. (discontinued)	Lat 46°22'28", long 117°05'07", in SW¼NE¼ sec.6, T.10 N., R.46 E., Asotin County, at county road, 3 mi (4.8 km) southwest of Clarkston.	1.80 (4.66)	1959-76	8- 3-76	---	206
		Dry Creek basin					
13343450	Dry Creek at mouth near Clarkston, Wash.	Lat 46°24'27", long 117°06'21", in NE¼ sec.25, T.11 N., R.45 E., Asotin County, at county road, 0.9 mi (1.4 km) above mouth and 2 mi (3.2 km) west of Clarkston.	6.83 (17.7)	1963-	8- 3-76	15.88	8,150
		Alpowa Creek basin					
13343510	Alpowa Creek at Peola, Wash.	Lat 46°19'03", long 117°29'28", in SW¼NE¼ sec.25, T.10 N., R.42 E., Garfield County, at State Highway 128, 0.8 mi (1.3 km) northwest of Peola.	0.5 (1.30)	1972-	2-16-76	7.37	9.4
13343520	Clayton Gulch near Alpowa, Wash. (discontinued)	Lat 46°26'52", long 117°17'36", in NE¼SE¼ sec.9, T.11 N., R.44 E., Garfield County, at private road, 1.5 mi (2.4 km) northeast of Alpowa and 10 mi (16.1 km) northwest of Clarkston.	5.60 (14.5)	1961-76	2-16-76	6.58	86
		Deadman Creek basin					
13343620	South Fork Deadman Creek tributary near Pataha, Wash. discontinued)	Lat 46°28'45", long 117°24'48", in SE¼NW¼ sec.34, T.12 N., R.43 E., Garfield County, at county road 6 mi (9.7 km) east of Pataha.	0.54 (1.40)	1961-76	2-16-76	14.60	6.6
13343790	Meadow Creek tributary near Central Ferry, Wash.	Lat 46°35'06", long 117°44'51", in SE¼NE¼ sec.26, T.13 N., R.40 E., Garfield County, 3.2 mi (5.1 km) south of Central Ferry.	1.63 (4.22)	1970-	2-16-76	15.62	27
13343800	Meadow Creek near Central Ferry, Wash.	Lat 46°35'51", long 117°46'54", in SE¼NW¼ sec.22, T.13 N., R.40 E., Garfield County, on right bank 5 ft (2 m) downstream from county bridge, 1.3 mi (2.1 km) upstream from mouth, 2.0 mi (3.2 km) southeast of Central Ferry, and 5.4 mi (8.7 km) north of Dodge.	66.2 (171.5)	1963-74‡, 1975-	2-16-76	5.51	449
		Tucannon River basin					
13344506	Kellogg Creek tributary No. 2 near Starbuck, Wash.	Lat 46°28'46", long 118°06'47", in SW¼NW¼ sec.31, T.12 N., R.38 E., Columbia County, at Kellogg Creek road 2.8 mi (4.5 km) southeast of Starbuck.	2.95 (7.64)	1970-	2-16-76	19.25	54
		Palouse River basin					
13349300	Palouse River tributary at Colfax, Wash.	Lat 46°53'22", long 117°22'59", in SE¼SW¼ sec.10, T.16 N., R.43 E., Whitman County, at U.S. Highway 295, about 1 mi (1.6 km) west of Colfax.	2.10 (5.44)	1955-	12-27-75	18.69	57
13349309	Palouse River tributary at Winona, Wash.	Lat 46°57'37", long 117°48'12", in SE¼SW¼ sec.17, T.17 N., R.40 E., Whitman County, at county road 1 mi (1.6 km) north of Winona.	2.94 (7.61)	1967-	1-16-76	15.15	56
13349400	Pine Creek at Pine City, Wash.	Lat 47°12'03", long 117°30'14", on line between NW¼ sec.27, T.20 N., R.42 E., Whitman County, on right bank 1.0 mi (1.6 km) east of Pine City and 2.3 mi (3.7 km) west of Malden.	302 (782)	1961-75‡	12-27-75	10.50	2,250
13349670	Pleasant Valley Creek tributary near Thornton, Wash.	Lat 47°02'30", long 117°26'19", in NE¼SW¼ sec.19, T.18 N., R.43 E., Whitman County, at county road 6 mi (9.7 km) southwest of Thornton.	.77 (1.99)	1967-	1-16-76	8.68	48
13349800	Imbler Creek tributary near Lamont, Wash.	Lat 47°09'51", long 117°52'56", in SW¼SE¼ sec.3, T.19 N., R.39 E., Whitman County, at county road 2.8 mi (4.5 km) southeast of Lamont.	1.33 (3.44)	1967-	2-16-76	10.44	42
13350500	Union Flat Creek near Colfax, Wash.	Lat 46°48'37", long 117°25'52", in NW¼NW¼ sec.8 T.15 N., R.43 E., Whitman County, 20 ft (6 m) upstream from county road bridge 6.0 mi (9.7 km) southwest of Colfax.	189 (490)	1953-71‡, 1972-	1-16-76	7.18	883

‡ Operated as continuous-record gaging station.
†† No evidence of flow.

Annual maximum discharge at crest-stage partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area mi^2 (km^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Palouse River basin--Continued					
13350800	Willow Creek tributary near La Crosse, Wash.	Lat 46°45'26", long 117°55'08", in SW¼NE¼ sec.28, T.15 N., R.39 E., Whitman County, at county road 4.3 mi (6.9 km) southwest of La Crosse.	0.95 (2.46)	1967-	2-16-76	8.39	44
13352500	Cow Creek at Hooper, Wash.	Lat 46°45'46", long 118°08'46", in NW¼NW¼ sec.26, T.15 N., R.37 E., Adams County, on county road bridge, 0.5 mi (0.8 km) upstream from mouth and 0.5 mi (0.8 km) north of Hooper.	679 (1,759)	1951-54‡, 1962-70‡, 1971-	5-20-76	3.04	100
		Smith Canyon basin					
13353050	Smith Canyon tributary near Connell, Wash.	Lat 46°32'28", long 118°45'54", in SE¼NW¼ sec.9, T.12 N., R.32 E., Franklin County, at county road about 8.5 mi (13.7 km) south of Connell.	1.80 (4.66)	1955-	1976	---	++
		Walla Walla River basin					
14017040	Thorn Hollow near Dayton, Wash. (discontinued)	Lat 46°20'50", long 118°03'55", in center of sec.16, T.10 N., R.38 E., Columbia County, at Thorn Hollow Road 4 mi (6.4 km) northwest of Dayton.	2.68 (6.94)	1962-76	12- 7-75	5.82	52
14017070	East Fork McKay Creek near Huntsville, Wash.	Lat 46°21'47", long 118°07'57", in SW¼NW¼ sec.12, T.10 N., R.37 E., Columbia County, at county road 1.7 mi (2.7 km) southwest of Alto.	4.92 (12.7)	1963-	2-16-76	6.26	47
14017490	Touchet River tributary near Lowden, Wash.	Lat 46°09'10", long 118°38'25", in SE¼SE¼ sec.23, T.8 N., R.33 E., Walla Walla County, at county road crossing, 7.1 mi (11.4 km) northwest of Lowden and 0.5 mi (0.8 km) upstream from mouth.	4.70 (12.17)	1975-	8-25-76	7.60	18
14019100	Walla Walla River tributary near Wallula, Wash.	Lat 46°03'12", long 118°52'58", in SW¼ sec.25, T.7 N., R.31 E., Walla Walla County, at U.S. Highway 410, 1.5 mi (2.4 km) southeast of Wallula.	.80 (2.07)	1955-	1976	---	++
		Fourmile Canyon basin					
14034040	Bofer Canyon tributary near Kennewick, Wash.	Lat 46°03'42", long 119°13'22", at center of line between secs.29 and 30, T.7 N., R.29 E., Benton County, at State Highway 12, 10 mi (16.1 km) southwest of Kennewick.	1.53 (3.96)	1965, 1967-	1976	---	++
		Glade Creek basin					
14034250	Glade Creek tributary near Bickleton, Wash. (discontinued)	Lat 46°04'07", long 120°12'23", in N½ sec.29, T.7 N., R.21 E., Yakima County, at intersection of Mabton-Bickleton Highway and Naught Road, 7 mi (11.3 km) northeast of Bickleton.	[b]0.5 (1.3)	1961-76	1976	---	++
14034270	East Branch Glade Creek near Prosser, Wash.	Lat 46°04'35", long 119°35'10", on line between secs.19 and 20, T.7 N., R.26 E., Benton County, at State Highway 221 and 12 mi (19.3 km) southeast of Prosser.	50.3 (130)	1962-	1976	---	++
		Alder Creek basin					
14034325	Alder Creek near Bickleton, Wash.	Lat 45°59'49", long 120°16'31", in NE¼NW¼ sec.23, T.6 N., R.20 E., Klickitat County, at county road 1.3 mi (2.1 km) east of Bickleton.	8.35 (21.6)	1963-	12-26-75	7.29	115
		Klickitat River basin					
14110000	Klickitat River near Glenwood, Wash.	Lat 46°05'20", long 121°15'30", in SE¼ sec.14, T.7 N., R.12 E., Yakima County, 0.4 mi (0.6 km) downstream from Dairy Creek and 5.2 mi (8.4 km) north of Glenwood.	360 (932)	1909-71‡, 1972-	12- 4-75	6.85	6,550
14110700	Medley Canyon Creek near Glenwood, Wash.	Lat 45°56'47", long 121°18'13", in NE¼SE¼ sec.4, T.5 N., R.12 E., at county road 5 mi (8.0 km) south of Glenwood.	1.26 (3.26)	1970-	1-15-76	3.21	8.6
14112000	Little Klickitat River near Goldendale, Wash.	Lat 45°50'40", long 120°47'42", in NE¼SW¼ sec.10, T.4 N., R.16 E., Klickitat County, 400 ft (122 m) upstream from State Highway 97 bridge, and 2.1 mi (3.4 km) northeast of Goldendale.	83.5 (216)	1911-12‡, 1947-51‡, 1958-70‡, 1971-	12- 4-75	5.74	1,230
14112200	Little Klickitat River tributary near Goldendale, Wash.	Lat 45°50'15", long 120°47'50", in NW¼ sec.15, T.4 N., R.16 E., Klickitat County, at county road 1.5 mi (2.4 km) northeast of Goldendale.	.71 (1.84)	1960-	2-16-76	7.64	13
14112400	Mill Creek near Blockhouse, Wash.	Lat 45°51'34", long 120°57'49", in NW¼SW¼ sec.5, T.4 N., R.15 E., Klickitat County, on left bank 1.9 mi (3.1 km) northwest of Blockhouse and 3.5 mi (5.6 km) upstream from mouth.	26.9 (69.7)	1964-72‡, 1973-	12- 7-75	3.63	136

++ No evidence of flow.

‡ Operated as continuous-record gaging station.

[b] Approximately.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Pend Oreille River basin				
Deer Creek	Davis Lake	Lat 48°11'49", long 117°17'38", in SE¼ sec.7, T.31 N., R.44 E., Pend Oreille County, at State Highway 311, 4.5 mi (7.2 km) southwest of Dalkena.	4.75	1954-73a, 1964-67	4-11-69 4-14-69 4-19-71	c 28.4 c 26.0 c 20.5
Davis Creek	Pend Oreille River	Lat 48°13'51", long 117°17'14", in NE¼ sec.31, T.32 N., R.44 E., Pend Oreille County, at State Highway 311, at outlet of Davis Lake, and 2.5 mi (4.0 km) southwest of Dalkena.	16	1954-73a, 1962-63, 1965,	4-11-69 4-14-69	c 110 c 100
Calispell Creek	do......	Lat 48°14'40", long 117°20'26", in NE¼SW¼ sec.26, T.32 N., R.43 E., Pend Oreille County, 2.4 mi (3.9 km) upstream from Calispell Lake, and 4.8 mi (7.7 km) west of Dalkena.	68.3	1950-73‡, 1974-	9- 3-74 1-28-76 7- 7-76 9-10-76	c 18.3 40.6 39.2 24.9
Winchester Creek	Calispell Creek	Lat 48°16'52", long 117°21'44", in NW¼ sec.15, T.32 N., R.43 E., Pend Oreille County, at county road around Calispell Lake and 4.8 mi (7.7 km) southwest of Cusick.	16.8	1957‡, 1954-68a, 1964-68, 1974-75a	9-19-74	c 35.5
Little Muddy Creek	Big Muddy Creek	Lat 48°43'58", long 117°25'36", in SW¼ sec.6, T.37 N., R.43 E., Pend Oreille County, at southwest edge of Ione.	11.3	1954-73a, 1962-64, 1967-68	4-21-71 6- 3-71 5- 4-72 5- 2-73	c 65.9 c 16.3 c 40.3 c 25.1
		Kettle River basin				
Third Creek	West Deer Creek	Lat 48°52'21", long 118°25'20", in NE¼ sec.19, T.39 N., R.35 E., Ferry County, at county road between Curlew and Orient, 8 mi (12.9 km) east of Curlew.	1.18	1954-73a, 1967	5-27-71	c 1.60
Kettle River	Columbia River	Lat 48°47'05", long 118°07'27", in SW¼SW¼ sec.16, T.38 N., R.37 E., Ferry County, at county road bridge, 0.1 mi (0.2 km) downstream from Toulou Creek, 1.1 mi (1.8 km) east of Barstow and at mile 10.9 (17.5 km).	4,044	1975-	3-16-76	564
		Nancy Creek basin				
Nancy Creek	Columbia River	Lat 48°39'19", long 118°06'46", in SE¼ sec.33, T.37 N., R.37 E., Ferry County, at U.S. Highway 395, 4.2 mi (6.8 km) northwest of Kettle Falls.	11.9	1952a, 1954-72a, 1965-67	4-17-69 5-27-71 8- 8-72 9-20-72	c 55.4 c 14.1 c 1.40 c 1.35
		Colville River basin				
Colville River	Franklin D. Roosevelt Lake	Lat 48°15'38", long 117°42'52", in SE¼NE¼ sec.23, T.32 N., R.40 E., Stevens County at center of span on upstream side of U.S. Highway 395 bridge, 0.7 mi (1.1 km) south of Chewelah.	295	1959-64, 1975-	3- 9-76 4- 1-76 4- 6-76 4-29-76 6- 8-76 6- 9-76 6-29-76	110 232 232 180 85.6 91.0 55.4
Do......	Do......	Lat 48°19'11", long 117°49'05", in NW¼NW¼ sec.31, T.33 N., R.40 E., on right bank upstream from county road bridge, just downstream from mouth of Blue Creek at town of Blue Creek, at former gaging station, 515 mi (8.8 km) northwest of Chewelah.	428	1923-24‡, 1926, 1958-59, 1960-65‡, 1975-	12-16-75 3- 9-76 4- 1-76 6-29-76	96.5 163 322 92.9
Patchen Creek (formerly Big Horn Creek)	Lake Thomas	Lat 48°38'32", long 117°31'05", in NW¼ sec.9, T.36 N., R.42 E., Stevens County, at State Highway 294, 6.0 mi (9.7 km) southwest of Tiger.	1.65	1954-73a, 1963-65, 1967-68	5- 1-69 4-21-71 5-27-71	c 6.28 c 8.37 c 1.05
Narcisse Creek	Little Pend Oreille River	Lat 48°30'52", long 117°43'57", in SE¼SW¼ sec.23, T.35 N., R.40 E., Stevens County, at State Highway 294, 8 mi (12.9 km) east of Colville.	11.1	1954-73a, 1961, 1966-68	4-17-69 4-25-69 5-27-71	c 31.7 c 32.0 c 5.93
		Harvey Creek basin				
South Fork Harvey Creek	Harvey Creek	Lat 48°12'36", long 118°04'49", in NE¼ sec.23, T.31 N., R.37 E., Stevens County, at county road up Harvey Creek, 3 mi (4.8 km) northeast of Cedonia.	18.1	1954-73a 1967	4-17-69 5-26-71 6-27-72 8- 8-72 9-19-72	c 14.3 c 19.9 c 3.86 c .79 c 1.00
North Fork Harvey Creek	Do......	Lat 48°10'26", long 118°06'42", in SW¼ sec.6, T.31 N., R.38 E., Stevens County, at Cedonia-Eddy county road, 5.6 mi (9.0 km) northeast of Cedonia.	6.96	1954-73a 1964, 1967	4-17-69 5-27-71	c 5.01 c 1.14

‡ Operated as continuous-record station.
a Operated as a crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Spokane River basin				
Hangman Creek tributary	Hangman Creek	Lat 47°19'16", long 117°10'42", in SE¼ sec.12, T.21 N., R.44 E., Spokane County, at State Highway 27, 3 mi (4.8 km) north of Latah.	2.18	1961-76a, 1964, 1967	4- 1-74	c 2.05
Deer Creek	Little Spokane River	Lat 47°53'28", long 117°20'06", center of S½ sec. 26, T.28 N., R.43 E., Spokane County, at county road 1 mi (1.6 km) upstream from mouth and 1 mi (1.6 km) east of Chattaroy.	31.9	1962-75a, 1948, 1952, 1955-58, 1960-68	9-24-73	c 1.47
Bigelow Gulch	Do......	Lat 47°46'14", long 117°19'34", in NE¼SE¼ sec.26, T.26 N., R.43 E., Spokane County, at private driveway off Bigelow Gulch Road, 1 mi (1.6 km) northeast of Spokane.	2.07	1968, 1962-75a	1-19-74 12-16-74	c 1.18 c.49
Little Creek (formerly Sheep Creek)	Do......	Lat 47°47'05", long 117°25'00", in NE¼ sec.6, T.26 N., R.43 E., Spokane County, at junction of Hazard and Dartford Roads at Dartford, and 0.2 mi (0.3 km) above mouth.	11.9	1948-49, 1964-65, 1967-68, 1963-75a	12-31-75	3.76
		Hawk Creek basin				
Cottonwood Creek (formerly Hawk Creek)	Columbia River	Lat 47°39'22", long 118°08'17", in NW¼NW¼ sec.22, T.25 N., R.37 E., Lincoln County, at old Highway 2, at east edge of Davenport.	23.2	1957a, 1959a, 1963-76a, 1963, 1965-66, 1968	1-23-70 2-16-70 2-17-70 1-18-81 1-15-73 1-16-73	38.1 352 123 50.6 30.6 161
		Sanpoil River basin				
Sanpoil River	Franklin D. Roosevelt Lake	Lat 48°39'04", long 118°42'16", in NW¼NE¼ sec.5, T.36 N., R.33 E., Ferry County, at private road bridge just upstream from an unnamed tributary, 1.7 mi (2.7 km) upstream from Granite Creek, 1.5 mi (2.4 km) east of Republic.	90.5	1975	11-17-75 1-12-76 4-26-76 6-28-76	4.63 4.29 20.0 75.2
Granite Creek	Sanpoil River	Lat 48°39'45", long 118°49'45", in W½ sec.31, T.37 N., R.32 E., Ferry County, at State Highway 30, 4.8 mi (7.7 km) west of Republic.	4.25	1954-73a, 1967	5- 5-69 7-18-73	c 18.2 c.07
Sanpoil River	Franklin D. Roosevelt Lake	Lat 48°37'17", long 118°43'39", in SE¼NW¼ sec.18, T.36 N., R.33 E., Ferry County, at county road crossing, 0.8 mi (1.3 km) downstream from Granite Creek at county road bridge, 1.8 mi (2.9 km) south of Republic.	169	1975	1-12-76 3- 1-76 4-26-76	8.17 9.58 61.7
Bailey Creek	Sanpoil River	Lat 48°33'48", long 119°01'58", in NE¼SW¼ sec.2, T.35 N., R.30 E., Okanogan County, Okanogan National Forest, on left bank at county road crossing 3.0 mi (4.8 km) northwest of Aeneas, and 0.8 mi (1.3 km) from the mouth.	8.04	1974-75a	6-25-74	c 3.06
Bridge Creek	Do......	Lat 48°14'25", long 118°35'49", in SE¼SW¼ sec.25, T.32 N., R.33 E., Ferry County, at road crossing 6 mi (9.7 km) above mouth and 12 mi (19.3 km) northeast of Keller.	18.4	1971-75a	6- 7-71 3-22-74	28.4 31.0
Do......	Do......	Lat 48°13'25", long 118°41'19", in NW¼NW¼ sec.5, T.31 N., R.33 E., Ferry County, Colville Indian Reservation, 0.5 mi (0.8 km) upstream from mouth, 10.3 mi (16.6 km) north of Keller.	31.6	1970, 1972-75	4-26-76	20.6
Sanpoil River	Franklin D. Roosevelt Lake	Lat 48°05'04", long 118°41'25", in NW¼SW¼ sec.20, T.30 N., R.33 E., Ferry County, Colville Indian Reservation, on upstream side of county highway bridge, 0.4 mi (0.6 km) upstream from Jack Creek and 0.5 mi (0.8 km) north of Keller.	900	1963, 1975	1-12-76 4-26-76 6- 8-76	94.5 773 314
Jack Creek	Sanpoil River	Lat 48°04'54", long 118°41'18", in SW¼SW¼ sec.20, T.30 N., R.33 E., Ferry County, at State Highway 21, 0.2 mi (0.3 km) above mouth and 0.4 mi (0.6 km) northwest of Keller.	8.17	1971-75a	8- 1-75 4-26-76	c 1.38 5.60
		Nespelem River basin				
Parmenter Creek	Nespelem River	Lat 48°15'06", long 118°58'47", in SE¼SE¼ sec.24, T.32 N., R.30 E., Okanogan County, at road crossing 0.5 mi (0.8 km) upstream from mouth and 6.0 mi (9.7 km) north of Nespelem.	6.94	1974-75a	6-26-74	c 0.51
		Okanogan River basin				
Middle Fork Toats Coulee Creek	Toats Coulee Creek	Lat 48°52'30", long 119°53'50", in SE¼SW¼ sec.13, T.39 N., R.23 E., Okanogan County, at road crossing 12 mi (19.3 km) northwest of Loomis.	17.1	1965-75a	5-15-69 6- 2-70	c 84.1 c 78.1

a Operated as crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Okanogan River basin--Continued				
Similkameen River at Oroville	Okanogan River	Lat 48°56'05", long 119°26'27", in NE¼SW¼ sec.28, T.40 N., R.27 E., Okanogan County, at center on downstream side of bridge at Twelfth Avenue bridge in Oroville.	3,590	1929-30, 1935, 1937, 1939, 1940, 1943-44, 1975-	1- 7-76 6-15-76	990 8,500
Aeneas Creek	Do......	Lat 48°39'34", long 119°29'02", in NE¼SW¼ sec.31, T.37 N., R.27 E., Okanogan County, at concrete weir structure, 1,500 ft (460 m) upstream from county road, 3.6 mi (5.8 km) southwest of Tonasket.	b 14.5	1955-56 1967, 1970-74	9-30-75	c 3.17
Omak Creek tributary	Omak Creek	Lat 48°20'16", long 119°10'16", in NE¼ sec.28, T.33 N., R.29 E., Okanogan County, at State highway 155, about 3.5 mi (5.6 km) southeast of Disautel.	4.12	1956-75a	5-12-69	c 2.52
Omak Creek	Okanogan River	Lat 48°22'02", long 119°26'38", in NE¼NW¼ sec.16, T.33 N., R.27 E., Okanogan County, Colville Indian Reservation, on right bank downstream wingwall of county highway bridge, 1.3 mi (2.1 km) upstream from Mission Creek, and 3.9 mi (6.3 km) southeast of Omak.	142	1972-74‡, 1975	4-29-76	39.2
Kartar Creek	Omak Lake	Lat 48°13'16", long 119°16'08", in NE¼NW¼ sec.2, T.31 N., R.28 E., Okanogan County, Colville Indian Reservation, 10 mi (16.1 km) southwest of Disautel, 1.6 mi (2.57 km) southeast of Omak Lake, 17.4 mi (28.0 km) southeast of Okanogan.	11.9	1974, 1975-a	7-11-74 4-29-76	c .70 1.33
Okanogan River	Columbia River	Lat 48°21'48", long 119°34'36", in SW¼NW¼ sec.16, T.33 N., R.26 E., Okanogan County, on downstream side of Oak Street (formerly U.S. Highway 97) bridge in Okanogan, 150 ft (46 m) northwest of Great Northern Railway depot, and 0.3 mi (0.5 km) upstream from Salmon Creek.	b 7,900	1911-25‡	1- 8-76 4-30-76	2,500 1,400
Okanogan River tributary	Okanogan River	Lat 48°16'50", long 119°42'00, in SW¼ sec.9, T.32 N., R.25 E., Okanogan County, at U.S. Highway 97, 0.2 mi (0.3 km) southeast of Malott.	f 2.66	-	3-29-74	c .31
Summit Creek	Loup Loup Creek	Lat 48°22'34", long 119°46'10", in SW¼NW¼ sec.12, T.33 N., R.24 E., Okanogan County, at road crossing 0.4 mi (0.6 km) upstream from Loup Loup Creek, and 7.0 mi (11.3 km) northwest of Malott.	17.4	1974-75a	6-27-74 4-30-76	c 4.14 4.87
		Methow River basin				
Methow River	Columbia River	Lat 48°37'46", long 120°27'50", in SW¼SW¼ sec.10, T.36 N., R.19 E., Okanogan National Forest, Okanogan County, on left bank 300 ft (91 km) below Gate Creek Campground, 0.2 mi (0.3 km) below Gate Creek, 2.5 mi (4.0 km) upstream from Early Winters Creek, 3.9 mi (6.3 km) northwest of Mazama and at mile 69.8 (112.3 km).	-	-	10-22-75 1-13-76 4- 7-76 5-12-76	54.0 109 211 2,760
Pine Creek	Early Winters Creek	Lat 48°34'48", long 120°37'33", in NE¼ sec.32, T.36 N., R.18 E., Okanogan County, at State Highway 20, 10 mi (16.1 km) west of Mazama.	4.63	1966-74a, 1967-68	6-16-72	c 97.8
Early Winters Creek	Methow River	Lat 48°35'55", long 120°26'31", in NE¼NE¼ sec.26, T.10 N., R.19 E., Okanogan National Forest, Okanogan County, on the upstream side of bridge near center of span, at Early Winters Ranger Station, 0.3 mi (0.5 km) from the mouth and 1.7 mi (2.7 km) northwest of Mazama on the North Cascade Highway (State Highway 20). Note.--New bridge is at slightly different location than Mazama quad sheet indicates.	-	-	10-22-75 1-13-76 4- 7-76 5-12-76	37.6 35.9 61.8 716
Methow River	Columbia River	Lat 48°32'40", long 120°19'20", in SW¼SE¼ sec.10, T.35 N., R.20 E., Okanogan County, on upstream side of bridge near left bank, at Weeman Bridge on State Highway 20, 5.0 mi (8.0 km) southeast of Mazama, 7.6 mi (12.2 km) downstream from Early Winters Creek and at mile 59.7 (96.1 km).	-	-	10-22-75 1-13-76 4- 7-76 5-12-76	70.7 127 303 3,640
Doe Creek	Chewack River	Lat 48°40'41", long 120°27'59", in NE¼ sec.30, T.37 N., R.22 E., Okanogan County, 14 mi (22.5 km) north of Winthrop and 32 mi (51.5 km) west of Tonasket.	3.80	1957-74a, 1958, 1966-68	8-31-71 6-16-72 7-31-74	c .07 c 17.1 c .64
Ortell Creek	Eightmile Creek	Lat 48°39'45", long 120°15'10", in NE¼SE¼ sec.31, T.37 N., R.21 E., Okanogan County, 0.7 mi (1.1 km) above mouth and 13 mi (20.9 km) north of Winthrop.	4.05	1965-75a, 1966-68	5-27-69 6- 4-70 8-31-71 8-16-72	c 11.0 c 7.55 c .28 c 15.7
Chewack River	Methow River	Lat 48°28'38", long 120°11'08", in SW¼NW¼, sec.2, T.34 N., R.21 E., Okanogan County, at center of downstream side of State Highway 20 bridge at Winthrop, 0.2 mi (0.3 km) upstream from the mouth.	525	1911, 1912-13‡, 1915, 1919, 1948, 1967, 1970-71 1973	10-22-75 1-13-76 4- 5-76 5-12-76	105 69.9 151 2,060

‡ Operated as a continuous-record station.
a Operated as a crest-stage gage.
b Approximately.
c Not previously published.
f Of which 0.47 mi^2 (1.22 km^2) appears to be noncontributing.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Methow river basin--Continued				
Williams Creek	Twisp River	Lat 48°23'50", long 120°27'45", in N½ sec.3, T.33 N., R.19 E., Okanogan County, 0.1 mi (0.2 km) above mouth and 16 mi (25.7 km) west of Twisp.	3.15	1965-74a, 1966-68	5-13-69 6- 4-70 9-23-71	c 28.0 c 39.6 c .38
Little Bridge Creek	Do......	Lat 48°24'25", long 120°19'40", near center of N½ sec.34, T.34 N., R.20 E., Okanogan County, at road crossing 10 mi (16.1 km) northwest of Twisp.	16.6	1965-74a, 1966-68	5-13-69 6- 4-70 7-26-72 8- 1-74	c 91.8 c 64.9 c 14.5 c 9.41
Methow River	Columbia River	Lat 48°20'47", long 120°04'54", in SE¼NE¼ sec.21, T.33 N., R.22 E., Okanogan County, on left bank, 1.3 mi (2.1 km) southeast of Twisp City limits, 2.2 mi (3.5 km) upstream from Beaver Creek and 3.0 mi (4.8 km) downstream from Twisp River.	-	-	10-23-75 1-13-76 4- 9-76	392 451 1,070
Do......	Do......	Lat 48°04'29", long 119°57'20", in NW¼NE¼ sec.28, T.30 N., R.23 E., Okanogan County, near left bank on downstream handrail of State Highway 153 bridge 1.7 mi (2.7 km) downstream from gaging station 12449950, Methow River near Pateros, 3.1 mi (5.0 km) downstream from Black Canyon Creek, 3.0 mi (4.8 km) northwest of Pateros and at mile 5.0 (8.0 km).	1,777	-	10-23-75 4- 8-76	518 955
Rainy Creek	South Fork Gold Creek	Lat 48°08'50", long 120°10'00", in NE¼ sec.35, T.31 N., R.21 E., Okanogan County, 200 ft (61 m) upstream from South Fork Gold Creek and 7.5 mi (12.1 km) west of Methow.	8.51	1965-75a, 1966-68	6- 3-70 5-13-71	c 34.9 c 44.4
		Chelan River basin				
Theis Creek	Stehekin River	Lat 48°25'59", long 122°52'37", sec.21, T.34 N., R.16 E., Chelan County, Okanogan National Forest, at road crossing 300 ft (91 m) upstream from mouth, 0.3 mi (0.5 km) upstream from Bridge Creek, and 13.5 mi (21.7 km) northwest of Stehekin.	-	-	8-26-69	c 0.14
Clear Creek	Do......	Lat 48°25'50", long 120°52'02", sec.21, T.34 N., R.16 E., Chelan County, Okanogan National Forest, 800 ft (244 m) upstream from mouth, 300 ft (91 m) upstream from road crossing, 0.2 mi (0.3 km) downstream from Bridge Creek, and 13 mi (21 km) northwest of Stehekin.	-	-	8-26-69	c .96
Do......	Do......	Lat 48°25'47", long 120°52'03", sec.21, T.34 N., R.16 E., Chelan County, Okanogan National Forest, 150 ft (46 m) upstream from mouth, 200 ft (61 m) downstream from road crossing, 0.2 mi (0.3 km) downstream from Bridge Creek, and 13 mi (21 km) northwest of Stehekin.	-	-	8-26-69	c 1.16
Devore Creek	Lake Chelan	Lat 48°18'45", long 120°40'59", in SW¼SW¼ sec.36, T.33 N., R.17 E., Chelan County, Lake Chelan National Forest, 300 ft (91 m) downstream from diversion point, 0.5 mi (0.8 km) upstream from mouth, and 1.5 mi (2.4 km) west of Stehekin.	13.6	-	8-27-69	c 8.29
Do......	Do......	Lat 48°19'03", long 120°40'37", in SE¼NW¼ sec.36, T.33 N., R.17 E., Chelan County, Lake Chelan National Forest, 300 ft (91 m) upstream from mouth, and 1.1 mi (1.8 km) northwest of Stehekin.	13.8	-	8-27-69	c .64
Purple Creek	Do......	Lat 48°18'35", long 120°38'52", in SE¼SE¼ sec.31, T.33 N., R.18 E., Chelan County, Lake Chelan National Forest, 250 ft (76 m) upstream from diversion dam, 0.4 mi (0.6 km) upstream from mouth, and 0.3 mi (0.5 km) east of Stehekin.	-	-	8-25-69	c .13
Do......	Do......	Lat 48°18'35", long 120°38'53". in SE¼SE¼ sec.31, T.33 N., R.18 E., Chelan County, Lake Chelan National Forest, 40 ft (12 m) upstream from diversion dam, 0.4 mi (0.6 km) upstream from mouth, and 0.3 mi (0.5 km) east of Stehekin.	-	-	8-25-69	c .14
		Entiat River basin				
Tillicum Creek	Mad River	Lat 47°43'25", long 120°26'20", in E½ sec.27, T.26 N., R.19 E., Chelan County, at logging road 0.1 mi (0.2 km) above Klouchman Creek and 3.5 mi (5.6 km) west of Ardenvoir.	7.15	1965-75a, 1965-67	5- 7-69 6- 4-70 5- 4-71 8- 1-73 7-29-74	c 30.6 c 8.19 c 45.5 c .88 c 4.83
		Wenatchee River basin				
White River	Wenatchee Lake	Lat 47°57'50", long 120°56'35", in SW¼ sec.35, T.29 N., R.15 E., Chelan County, Wenatchee National Forest, at road crossing 10.6 mi (17.1 km) northwest of Telma at mile 15.3 (24.6 km).	66.3	1970, 1973, 1975-	9- 8-76 9-20-76	259 258
Panther Creek	White River	Lat 47°56'24", long 120°55'41", in E½ sec.11, T.28 N., R.15 E., Chelan County, Wenatchee National Forest, 8.8 mi (14.2 km) northwest of Telma, and 100 ft (30 m) upstream from mouth.	19.1	1911, 1975-	9- 8-76 9-20-76	131 32.3

a Operated as a crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wenatchee River basin--Continued				
Napeequa River	White River	Lat 47°55'17", long 120°53'38", in SW¼SE¼ sec.18, T.28 N., R.16 E., Chelan County, 6.8 mi (10.9 km) northwest of Telma, and 200 ft (61 m) upstream from mouth.	40.0	1911, 1975-	9- 8-76 9-20-76	152 232
Canyon Creek	Do......	Lat 47°54'27", long 120°53'38", in SW¼SE¼ sec.19, T.28 N., R.16 E., Chelan County, Wenatchee National Forest, 6.0 mi (9.7 km) northwest of Telma, and about 500 ft (150 km) upstream from mouth.	4.27	1975-	9- 8-76 9-21-76	1.85 1.22
Sears Creek	Do......	Lat 47°53'10", long 120°53'13", in E½NE¼ sec.31, T.28 N., R.16 E., Chelan County, Wenatchee National Forest, at road crossing 4.8 mi (7.7 km) northeast of Telma, and 0.3 mi (0.5 km) upstream from mouth.	.75	1975-	9- 8-76 9-21-76	.12 .31
Little Wenatchee River	Wenatchee Lake	Lat 47°55'08", long 121°05'13", in NE¼ sec.14, T.28 N., R.13 E., Chelan County, Wenatchee National Forest, at bridge 15.2 mi (24.5 km) northwest of Telma, and 0.5 mi (0.8 km) upstream from Cady Creek.	10.9	1975-	9-10-76 9-21-76	20.9 17.0
Cady Creek	Little Wenatchee River	Lat 47°54'50", long 121°05'33", in SE¼ sec.14, T.28 N., R.13 E., Chelan County, Wenatchee National Forest, 15.0 mi (22.5 km) northwest of Telma, and 20 ft (6.1 m) upstream from mouth.	7.65	1975-	9-10-76 9-21-76	13.9 9.07
Fish Creek	Do......	Lat 47°54'20", long 121°05'04", in NW¼ sec.24, T.28 N., R.13 E., Chelan County, Wenatchee National Forest, 13.9 mi (22.4 km) northwest of Telma, and 80 ft (24 m) upstream from mouth.	7.92	1975-	9-11-76 9-21-76	16.7 10.4
Fourteenmile Creek	Do......	Lat 47°53'47", long 121°04'11", in SE¼ sec.24, T.28 N., R.13 E., Chelan County, Wenatchee National Forest, 13.0 mi (20.9 km) northwest of Telma, at road crossing 0.1 mi (0.2 km) upstream from mouth.	.09	1975-	9-10-76 9-21-76	.10 .14
Lake Creek	Do......	Lat 47°52'35", long 121°02'04", in SW¼SW¼ sec.31, T.28 N., R.15 E., Chelan County, Wenatchee National Forest, at road crossing 0.2 mi (0.3 km) upstream from mouth, and 10.9 mi (17.5 km) northwest of Telma.	16.5	1911, 1975-	9-10-76 9-21-76	21.1 17.8
Theseus Creek	Do......	Lat 47°52'24", long 121°00'58", in NE¼ sec.6, T.27 N., R.15 E., Chelan County, Wenatchee National Forest, 11.0 mi (17.7 km) northwest of Telma, and at road crossing 150 ft (46 m) upstream from mouth.	1.05	1975-	9-10-76 9-21-76	1.06 .73
Rainy Creek	Do......	Lat 47°51'02", long 120°57'37", in S½ sec.10, T.27 N., R.15 E., Chelan County, Wenatchee National Forest, at road crossing, 0.3 mi (0.5 km) upstream from mouth, 7.2 mi (11.6 km) west of Telma.	17.2	1911, 1973, 1975-	9-10-76 9-21-76	33.4 25.5
Little Wenatchee River	Wenatchee Lake	Lat 47°50'58", long 120°56'39", in center of SW¼ sec.11, T.27 N., R.15 E., Chelan County, Wenatchee National Forest, at Riverside Campground, 5.5 mi (8.8 km) west of Telma.	84.0	1975-	9-10-76 9-21-76	143 93.2
Little Wenatchee River tributary	Little Wenatchee River	Lat 47°50'25", long 120°55'50", in SE¼NE¼ sec.14, T.27 N., R.15 E., Chelan County, at logging road 0.2 mi (0.3 km) above mouth and 6 mi (9.7 km) west of Telma.	1.02	1965-75a, 1965-67 1975-	5-26-69 6- 2-70 6-14-72 9-10-76 9-21-76	c 14.5 c 33.8 c 15.0 .50 .85
Little Wenatchee River	Wenatchee Lake	Lat 47°50'02", long 120°50'11", in SE¼SW¼ sec.15, T.27 N., R.16 E., Chelan County, Wenatchee National Forest, 0.8 mi (1.3 km) upstream from Wenatchee Lake, 1.5 mi (2.4 km) southwest of Telma.	100	1911-13, 1967, 1970, 1973, 1975-	9-11-76 9-22-76	168 113
Whitepine Creek (formerly Wild Horse Creek)	Nason Creek	Lat 47°46'29", long 120°54'55", in SW¼SE¼ sec.1, T.26 N., R.15 E., Chelan County, at road crossing near mouth, and 3.7 mi (6.0 km) west of Merritt.	24.5	1911, 1975-	9-11-76 9-22-76	34.4 .48
Nason Creek	Wenatchee River	Lat 47°46'37", long 120°54'22", in SW¼SW¼ sec.6, T.26 N., R.16 E., Chelan County, Wenatchee National Forest, 0.4 mi (0.6 km) downstream from Whitepine Creek, and 8.0 mi (12.9 km) west of Coles Corner at mile 14.8 (23.8 km).	61.6	1973, 1975-	9-11-76 9-22-76	70.9 56.6
Marhar Creek	Nason Creek	Lat 47°47'09", long 120°52'33", in NE¼NW¼ sec.5, T.26 N., R.16 E., Chelan County, at road crossing 1.9 mi (3.1 km) west of Merritt, and 0.1 mi (0.2 km) upstream from mouth.	1.83	1975-	9-11-76 9-23-76	.10 .20
Kahler Creek	Do......	Lat 47°46'02", long 120°45'14", in SW¼NW¼ sec.8, T.26 N., R.17 E., Chelan County, at power line service road crossing 3.9 mi (6.3 km) east of Merritt, and 500 ft (152 m) upstream from mouth.	3.26	1975-	9-11-76 9-22-76	1.03 .74
Nason Creek	Wenatchee River	Lat 47°47'26", long 120°42'55", in SE¼SE¼ sec.33, T.27 N., R.17 E., Chelan County, Lake Wenatchee State Park, 2.8 mi (4.5 km) northeast of Coles Corner at mile 1.6 (2.6 km).	107	1973, 1975-	9- 8-76 9-22-76	135 83.0

a Operated as crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wenatchee River basin--Continued				
Fish Lake Run (formerly Fish Lake Outlet)	Wenatchee River	Lat 47°49'08", long 120°41'43", in SE¼SE¼ sec.22, T.27 N., R.17 E., Chelan County, Wenatchee National Forest, at upstream side of culvert on Fish Lake road, 4.3 mi (6.9 km) northwest of Plain.	5.51	1974-	9- 8-76 9-22-76	1.24 .90
Chiwawa River	Do......	Lat 48°04'12", long 120°51'04", in NE¼ sec.28, T.30 N., R.16 E., Chelan County, 500 ft (152 m) upstream from Phelps Creek, and 15.9 mi (25.6 km) north of Telma.	26.0	1975-	9- 9-76 9-21-76	108 116
Phelps Creek	Chiwawa River	Lat 48°04'24", long 120°50'58", in NW¼ sec.27, T.30 N., R.16 E., Chelan County, at road crossing, 0.3 mi (0.5 km) upstream from mouth, and 16.0 mi (25.7 km) north of Telma.	16.4	1926, 1927-31‡, 1948, 1975-	9- 9-76 9-21-76	37.4 38.0
Maple Creek	Do......	Lat 48°01'30", long 120°49'42", in NE¼ sec.11, T.29 N., R.16 E., Chelan County, Wenatchee National Forest, 500 ft (152 m) upstream from mouth, and 12.7 mi (20.4 km) north of Telma.	5.31	1975-	9- 9-76 9-22-76	2.19 2.35
Rock Creek	Do......	Lat 47°58'13", long 120°47'18", in SW¼NE¼ sec.36, T.29 N., R.16 E., Chelan County, Wenatchee National Forest, at road crossing 0.6 mi (1.0 km) upstream from mouth, and 8.9 mi (14.3 km) north of Telma.	21.3	1975-	9- 7-76 9- 21-76 •	25.0 20.4
Chewawa River tributary	Do......	Lat 47°57'07", long 120°46'10", in NE¼SW¼ sec.6, T.28 N., R.17 E., Chelan County, Wenatchee National Forest, 0.3 mi (0.5 km) northwest of Rock Creek Guard Station, and 7.8 mi (12.6 km) north of Telma.	.41	1975-	9- 7-76 9-21-76	0 0
Do......	Do......	Lat 47°57'01", long 120°46'01", in NE¼SW¼ sec.6, T.28 N., R.17 E., Chelan County, Wenatchee National Forest, at Rock Creek Guard Station, 7.7 mi (12.4 km) north of Telma.	.41	1975-	9- 7-76 9- 21-76	.60 .47
Minnow Creek	Chikamin Creek	Lat 47°54'36", long 120°43'11", in NW¼SE¼ sec.21, T.28 N., R.17 E., Chelan County, Wenatchee National Forest, 100 ft (30 m) upstream from mouth, and 10.9 mi (17.5 km) northwest of Plain.	3.10	1975-	9- 9-76 9-20-76	1.30 1.05
Chikamin Creek	Chiwawa River	Lat 47°54'31", long 120°43'16", in NW¼SE¼ sec.21, T.28 N., R.17 E., Chelan County, Wenatchee National Forest, at road crossing 0.5 mi (0.8 km) upstream from mouth, and 4.2 mi (6.8 km) northeast of Telma.	20.5	1975-	9- 9-76 9-20-76	11.6 11.2
Brush Creek	Do......	Lat 47°53'20", long 120°43'15", in NW¼NE¼ sec.33, T.28 N., R.17 E., Chelan County, Wenatchee National Forest, at logging road crossing 1.0 mi (1.6 km) upstream from mouth, and 6.2 mi (10.0 km) northeast of Telma.	3.34	1965-68, 1965-75a	5-27-69 6- 8-71 6-13-72 9-10-76 9-21-76	c 20.3 c 20.4 c 18.4 .93 .86
Gate Creek	Do......	Lat 47°53'55", long 120°42'12", in SE¼NW¼ sec.27 T.28 N., R.17 E., Chelan County, Wenatchee National Forest, 0.1 mi (0.2 km) upstream from mouth, and 6.3 mi (10.1 km) northeast of Telma.	3.01	1975-	9- 9-76 9-20-76	.90 .66
Big Meadow Creek	Do......	Lat 47°52'04", long 120°41'44", in NE¼SE¼ sec.3, T.27 N., R.17 E., Chelan County, Wenatchee National Forest at road crossing 0.2 mi (0.3 km) upstream from mouth, 7.5 mi (12.1 km) northwest of Plain.	16.5	1954, 1973, 1975-	9-10-76 9-21-76	5.88 4.63
Alder Creek	Do......	Lat 47°50'55", long 120°39'31", in SW¼SE¼ sec.12, T.27 N., R.17 E., Chelan County, Wenatchee National Forest at road crossing 0.4 mi (0.6 km) upstream from mouth, and 6.0 mi (9.7 km) north of Plain.	16.5	1954, 1975-	9- 9-76 9-20-76	2.84 2.47
Chiwawa River	Wenatchee River	Lat 47°50'21", long 120°39'27", in NW¼SE¼ sec.13, T.27 N., R.17 E., Chelan County, Wenatchee National Forest, at county road crossing, 0.5 mi (0.8 km) upstream from Goose Creek, and 5.2 mi (8.4 km) north of Plain.	172	1911-14‡, 1936-49‡, 1954-57‡, 1958, 1967, 1970, 1975-	9- 9-76 9-20-76	373 270
Goose Creek	Chiwawa River	Lat 47°50'21", long 120°38'46", in NW¼SW¼ sec.18, T.27 N., R.17 E., Chelan County, Wenatchee National Forest, 0.4 mi (0.6 km) upstream from mouth, and 5.3 mi (8.5 km) north of Plain.	2.43	1975-	9- 9-76 9-20-76	.90 .99
Deep Creek	Do......	Lat 47°49'12", long 120°38'00", in SW¼SE¼ sec.19, T.27 N., R.18 E., Chelan County, Wenatchee National Forest, at road crossing 0.3 mi (0.5 km) upstream from mouth, and 4.0 mi (6.4 km) northeast of Plain.	2.82	1975-	9- 9-76 9-20-76	1.41 1.31
Beaver Creek	Wenatchee River	Lat 47°45'53", long 120°39'18", in NW¼SE¼ sec.12, T.26 N., R.17 E., Chelan County, Wenatchee National Forest, at road crossing 0.3 mi (0.5 km) upstream from mouth, at Plain.	10.0	1910-11, 1975-	9- 9-76 9-20-76	3.64 3.82
Chiwaukum Creek	Do......	Lat 47°40'44", long 120°43'39", in SE¼NW¼ sec.9, T.25 N., R.17 E., Chelan County, Wenatchee National Forest, 1.0 mi (1.6 km) southeast of Chiwaukum, and 0.1 mi (0.2 km) upstream from mouth.	49.6	1911‡, 1912-13, 1926, 1958, 1967, 1975-	9-10-76 9-22-76	55.8 52.9

‡ Operated as continuous-record station.
a Operated as a crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wenatchee River basin--Continued				
Skinney Creek	Chiwaukum Creek	Lat 47°43'23", long 120°44'06", in NW¼SW¼ sec.28, T.26 N., R.17 E., Chelan County, at U.S. Highway 2, 0.7 mi (1.1 km) south of Winton.	2.55	1954-73a, 1965, 1967	6- 8-71 6-14-72	c 1.56 c 1.77
Icicle Creek	Wenatchee River	Lat 47°36'46", long 120°56'40", in NW¼NW¼ sec.2, T.24 N., R.15 E., Chelan County, Wenatchee National Forest, 100 ft (30 m) upstream from Black Pine Creek, and 13.3 mi (21.4 km) west of Leavenworth.	74.3	1975-	9- 9-76 9-22-76	145 95.8
Black Pine Creek	Icicle Creek	Lat 47°36'42", long 120°56'39", in NW¼NW¼ sec.2, T.24 N., R.15 E., Chelan County, Wenatchee National Forest, 13.3 mi (21.4 km) west of Leavenworth, and 0.1 mi (0.2 km) upstream from mouth.	3.33	1975-	9- 9-76 9-22-76	1.46 .32
Grindstone Creek	Do......	Lat 47°36'43", long 120°56'32", in NW¼NW¼ sec.2, T.24 N., R.15 E., Chelan County, Wenatchee National Forest, at mouth, and 13.3 mi (21.4 km) west of Leavenworth.	.94	1975-	9- 9-76 9-22-76	0 0
Jack Creek	Do......	Lat 47°36'30", long 120°54'02", in NW¼ sec.6, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, at end of road near mouth, and 11.3 mi (18.2 km) west of Leavenworth.	29.1	1911, 1975-	9- 9-76 9-22-76	25.0 18.5
Trout Creek	Do......	Lat 47°36'23", long 120°53'33", in NW¼ sec.6, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, at foot trail crossing near mouth and 10.7 mi (17.2 km) west of Leavenworth.	8.43	1911, 1975-	9- 9-76 9-22-76	9.17 6.65
Chatter Creek	Do......	Lat 47°36'27", long 120°53'16", in N½ sec.6, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, at Icicle Creek road 11 mi (17.7 km) west of Leavenworth.	2.25	1966-75a, 1965-68, 1970, 1975-	5-27-69 6- 9-71 5-22-72 6-14-72 9- 9-76 9-21-76	c 24.9 c 21.7 c 35.0 c 15.3 1.31 1.02
Doctor Creek	Do......	Lat 47°36'26", long 120°51'54", in SE¼NE¼ sec.5, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, 200 ft (61 m) upstream from mouth, and 9.6 mi (15.4 km) west of Leavenworth.	1.97	1975-	9- 9-76 9-22-76	2.34 3.15
Ida Creek	Do......	Lat 47°36'26", long 120°50'53", in SW¼NE¼ sec.4, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, 8.8 mi (14.2 km) west of Leavenworth, and 10 ft (3.0 m) upstream from mouth.	1.42	1975-	9- 9-76 9-21-76	.72 .44
Johnny Creek	Do......	Lat 47°35'54", long 120°49'01", in NW¼SW¼ sec.2, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, 25 ft (7.6 m) upstream from mouth, and 7.4 mi (11.9 km) west of Leavenworth.	1.24	1975-	9- 9-76 9-21-76	.95 .81
Bridge Creek	Do......	Lat 47°33'41", long 120°46'44", in NE¼NE¼ sec.24, T.24 N., R.16 E., Chelan County, Wenatchee National Forest, 50 ft (15 m) upstream from mouth, and 6.1 mi (9.8 km) west of Leavenworth.	1.16	1975-	9- 9-76 9-21-76	.40 .13
Icicle Creek	Wenatchee River	Lat 47°32'28", long 120°43'08", in SE¼SE¼ sec.28, T.24 N., R.17 E., Chelan County, Wenatchee National Forest, 1,000 ft (305 m) upstream from Icicle Canal diversion dam, 4.8 mi (7.7 km) southwest of Leavenworth, and at mile 5.8 (9.3 km).	193	1936-71‡, 1973-74a	9-21-76	231
Snow Creek	Icicle Creek	Lat 47°32'32", long 120°42'38", in SW¼SW¼ sec.27, T.24 N., R.17 E., Chelan County, Wenatchee National Forest, at Icicle irrigation ditch crossing, 4.5 mi (7.2 km) southwest of Leavenworth, and 0.1 mi (0.2 km) upstream from mouth.	11.4	1911, 1945-51, 1953, 1957, 1975-	9-10-76	11.9
Chumstick Creek	Wenatchee River	Lat 47°42'51", long 120°38'07", in NW¼NE¼ sec.31, T.26 N., R.18 E., Chelan County, Wenatchee National Forest, 8.2 mi (13.2 km) north of Leavenworth, and 0.2 mi (0.3 km) downstream from Little Chumstick Creek.	24.9	1975-	9-10-76 9-22-76	2.32 2.28
Van Creek	Eagle Creek	Lat 47°39'24", long 120°32'29", in NW¼NW¼ sec.24, T.25 N., R.18 E., Chelan County, Wenatchee National Forest, at road crossing at mouth, 6.9 mi (11.1 km) northeast of Leavenworth.	8.09	1975-	9-10-76 9-22-76	1.43 1.36
Eagle Creek	Chumstick River	Lat 47°37'28", long 120°38'36", in NE¼NW¼ sec.31, T.25 N., R.18 E., Chelan County, 50 ft (15.2 m) upstream from mouth, and 2.1 mi (3.4 km) northeast of Leavenworth.	28.4	1975-	9-10-76 9-22-76	1.66 1.28
Chumstick Creek	Wenatchee River	Lat 47°36'18", long 120°38'50", in SE¼NE¼ sec.1, T.24 N., R.17 E., Chelan County, 0.8 mi (1.3 km) northeast of Leavenworth, and 0.2 mi (0.3 km) upstream from mouth.	79.3	1975-	9-10-76 9-22-76	8.63 10.6
Posey Canyon	Do......	Lat 47°36'01", long 120°37'22", in SW¼SW¼ sec.5, T.24 N., R.18 E., Chelan County, at road crossing, 1.8 mi (2.9 km) east of Leavenworth, and 0.6 mi (1.0 km) upstream from mouth.	1.36	1954-73a, 1954-55, 1957-59, 1965, 1967, 1975-	6- 9-71 9-10-76 9-22-76	c .21 e .08 0

‡ Operated as continuous-record station.
a Operated as crest-stage gage.
c Not previously published.
e Estimated.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wenatchee River basin--Continued				
Derby Canyon	Wenatchee River	Lat 47°34'11", long 120°35'10", in SE¼SE¼ sec.16, T.24 N., R.18 E., Chelan County, 0.8 mi (1.3 km) east of Peshastin, and 0.1 mi (0.2 km) upstream from mouth.	12.6	1975-	9-10-76 9-22-76	1.67 1.42
Scotty Creek	Peshastin Creek	Lat 47°22'40", long 120°38'41", in SW¼SE¼ sec.24, T.22 N., R.17 E., Chelan County, Wenatchee National Forest, 3.2 mi (5.1 km) south of Blewett and 100 ft (30 m) upstream from mouth.	7.15	1975-	9- 8-76 9-20-76	.66 .62
Shaser Creek	Do......	Lat 47°23'28", long 120°39'28", in SW¼SW¼ sec.13, T.22 N., R.17 E., Chelan County, Wenatchee National Forest, 2.2 mi (3.5 km) south of Blewett, and 40 ft (12 m) upstream from mouth.	8.92	1975-	9- 8-76 9-20-76	1.46 1.60
Tronsen Creek	Do......	Lat 47°20'18", long 120°33'58", in NE¼SW¼ sec.3, T.21 N., R.18 E., Chelan County, at forest campground, 0.6 mi (1.0 km) northeast of Swauk Pass and 17 mi (27.4 km) south of Peshastin.	3.96	1959, 1966-67, 1960a, 1962-74a, 1975-	5-28-69 6-14-72 6- 5-74 9- 8-76 9-20-76	c 12.0 c 11.1 c 21.9 .90 .69
Do......	Do......	Lat 47°23'52", long 120°39'03", in SE¼NW¼ sec.13, T.22 N., R.17 E., Chelan County, Wenatchee National Forest, 12.3 mi (19.8 km) south of Peshastin, and 100 ft (30 m) upstream from mouth.	16.2	1975-	9- 8-76 9-20-76	1.49 .91
Culver Springs	Do......	Lat 47°25'15", long 120°39'28", in SW¼SW¼ sec.1, T.22 N., R.17 E., Chelan County, Wenatchee National Forest, 0.2 mi (0.3 km) south of Blewett, and 75 ft (23 m) upstream from mouth.	.66	1975-	9- 8-76 9-20-76	0 0
Nigger Creek	Do......	Lat 47°26'37", long 120°39'38", in NE¼SW¼ sec.36, T.23 N., R.17 E., Chelan County, Wenatchee National Forest, 9.2 mi (14.8 km) southwest of Peshastin, and 30 ft (9 m) upstream from mouth.	12.2	1911, 1975-	9- 8-76 9-20-76	6.43 3.90
Ruby Creek	Do......	Lat 47°26'59, long 120°39'10", in NE¼NE¼ sec.36, T.23 N., R.17 E., Chelan County, Wenatchee National Forest, at State Highway 97 crossing, 1.8 mi (2.9 km) north of Blewett, and 300 ft (91 m) upstream from mouth.	4.59	1975-	9- 8-76 9-20-76	.41 .39
Ingalls Creek	Do......	Lat 47°27'48", long 120°39'38", in SE¼NW¼ sec.25, T.23 N., R.17 E., Chelan County, 9.4 mi (14.1 km) south of Leavenworth, and 300 ft (91 m) upstream from mouth.	36.8	1911, 1973, 1975-	9- 8-76 9-20-76	45.6 31.2
Hansel Creek	Do......	Lat 47°28'17", long 120°39'21", in NW¼SE¼ sec.24, T.23 N., R.17 E., Chelan County, Wenatchee National Forest, 7.3 mi (11.7 km) south of Peshastin, and 50 ft (15 m) upstream from mouth.	3.76	1927, 1975-	9- 8-76 9-21-76	.73 1.12
Camas Creek	Do......	Lat 47°29'39", long 120°37'59", in NW¼NE¼ sec.18, T.23 N., R.18 E., Chelan County, at State Highway 97 crossing 5.0 mi (8.0 km) north of Blewett, and 0.3 mi (0.5 km) upstream from mouth.	9.12	1975-	9- 8-76 9-21-76	.16 .12
Mill Creek	Do......	Lat 47°30'39", long 120°37'49", in SW¼SE¼ sec.6, T.23 N., R.18 E., Chelan County, 4.3 mi (6.9 km) southwest of Peshastin, and 20 ft (6.1 m) upstream from mouth.	5.36	1975-	9- 8-76 9-21-76	.50 0
Peshastin Creek	Wenatchee River	Lat 47°33'09", long 120°36'07", in NW¼NW¼ sec.28, T.24 N., R.18 E., Chelan County, at road crossing 1.3 mi (2.1 km) south of Peshastin, and 1.4 mi (2.3 km) upstream from mouth.	133	1904, 1914, 1948, 1975-	9- 8-76 9-21-76	d 51.7 31.2
East Fork Mission Creek	Mission Creek	Lat 47°22'51", long 120°29'16", in NE¼SW¼ sec.20, T.22 N., R.19 E., Chelan County, Wenatchee National Forest, at U.S. Forest Service road crossing 9.7 mi (15.6 km) south of Cashmere.	15.4	1955-74a, 1955-61, 1963, 1965-67, 1975-	9- 7-76 9-21-76	1.26 .92
East Branch Mission Creek tributary	East Branch Mission Creek	Lat 47°22'54", long 120°29'20", in NE¼SW¼ sec.20, T.22 N., R.19 E., Chelan County, Wenatchee National Forest, at U.S. Forest Service road crossing 9.7 mi (15.6 km) south of Cashmere.	2.49	1955-74a, 1955-60, 1966-67, 1975-	9- 7-76 9-21-76	e.05 e.05
Mission Creek	Wenatchee River	Lat 47°25'48", long 120°30'28", in SE¼NW¼ sec.6, T.22 N., R.19 E., Chelan County, Wenatchee National Forest, 6.5 mi (10.5 km) south of Cashmere, and 400 ft (120 m) upstream from Sand Creek.	39.8	1959-71‡, 1973-74a, 1975-	10- 5-71 9- 7-76 9-21-76	c 2.18 4.73 3.58
Little Camas Creek	Sand Creek	Lat 47°26'02", long 120°32'19", in NE¼ sec.2, T.22 N., R.18 E., Chelan County, Wenatchee National Forest, at mouth, 7.0 mi (11.3 km) southwest of Cashmere.	5.59	1975-	9- 7-76 9-21-76	.51 .33
Poison Creek	Do......	Lat 47°26'00", long 120°31'04", in NW¼ sec.6, T.22 N., R.19 E., Chelan County, Wenatchee National Forest, at road crossing at mouth, 6.5 mi (10.5 km) south of Cashmere.	3.44	1975-	9- 7-76 9-21-76	e .15 e .08

‡ Operated as a continuous-record station.
a Operated as a crest-stage gage.
c Not previously published.
d Included 23.7 cfs in irrigation canal.
e Estimated.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wenatchee River basin--Continued				
Sand Creek	Mission Creek	Lat 47°25'48", long 120°30'25", in SW¼NE¼ sec.6, T.22 N., R.19 E., Chelan County, Wenatchee National Forest, 60 ft (18 m) upstream from mouth, 6.5 mi (10.5 km) south of Cashmere.	18.6	1954a, 1955-56‡, 1957-73a, 1957, 1959-60, 1963, 1965, 1967, 1970, 1973, 1975-	9- 7-76 9-21-76	1.17 1.20
Mission Creek	Wenatchee River	Lat 47°31'00", long 120°28'30", in NW¼[illegible] sec.9, T.23 N., R.19 E., Chelan County, 0.4 mi (0.6 km) below former gage, and 1.0 mi (1.6 km) south of Cashmere.	81.2	1954a, 1954-58‡, 1959-73a, 1959, 1965, 1967, 1975-	9- 7-76 9-21-76	10.4 13.7
		Douglas Creek basin				
Moses Creek	Douglas Creek	Lat 47°37'03", long 120°00'27", in NE¼SE¼ sec.36, T.25 N., R.22 E., Douglas County, at county road, 0.3 mi (0.5 km) southeast of Douglas.	15.4	1955a, 1957-75a, 1965	4- 6-76	110
Rattlesnake tributary	Rattlesnake Creek	Lat 47°26'30", 119°35'45", in SW¼ sec.32, T.23 N., R.26 E., Douglas County, at county road, 6 mi (9.7 km) northeast of Soap Lake.	2.22	1959a, 1961-76a	3-11-76	.05
McCarteney Creek tributary No.2	McCarteney Creek	Lat 47°36'27", long 119°38'58", in SW¼NE¼ sec.2, T.24 N., R.25 E., Douglas County, 1.0 mi (1.6 km) east of Moses Coulee on U.S. Highway 2, 7.0 mi (11.3 km) east of Farmer, and 18 mi (29 km) west of Coulee City.	-	-	8- 6-76	3,840
Coyote Canyon	Do......	Lat 47°30'05", long 119°43'18", in SW¼SW¼ sec.8, T.23 N., R.25 E., Douglas County, at road crossing 9.0 mi (14.5 km) southeast of Farmer.	-	-	8- 6-76	700
		Crab Creek basin				
South Fork Crab Creek tributary	Crab Creek	Lat 47°32'12", long 117°51'12", in SW¼SE¼ sec.26, T.24 N., R.19 E., Lincoln County, at county road between Waukon and Edwall, 0.5 mi (0.8 km) southwest of Waukon.	0.68	1954-73a, 1968	1-16-73	c 26.4
Corbett Draw	Wilson Creek	Lat 47°42'37", long 118°55'25", in SW¼NE¼ sec.23, T.26 N., R.31 E., Lincoln County, 300 ft (91 m) downstream from U.S. Highway 2 bridge, and 0.8 mi (1.3 km) east of Almira city center.	85.6	-	8- 6-76	1,850
Corbett Draw tributary	Corbett Draw	Lat 47°42'21", long 118°55'46", in NE¼SW¼ sec.33, T.26 N., R.31 E., Lincoln County, 900 ft (274 m) above the mouth, 0.2 mi (0.3 km) downstream from U.S. Highway 2, and 0.5 mi (0.8 km) southeast of Almira city center.	18.8	-	8- 6-76	3,040
Corbett Draw	Wilson Creek	Lat 47°39'52", long 118°55'35", in SE¼NW¼ sec.16, T.25 N., R.31 E., Lincoln County, 1,000 ft (305 m) upstream from the mouth, and 3 mi (5 km) south of Almira.	119	-	8- 6-76	3,330
Arbuckle Draw	Crab Creek	Lat 47°36'49", long 119°08'58", in SE¼SE¼ sec.34, T.25 N., R.29 E., Grant County, 6.0 mi (9.7 km) southeast of Hartline and 6.5 mi (10.5 km) east of Coulee City.	65	-	8- 6-76	807
Iron Springs Creek	Do......	Lat 47°20'00", long 119°42'12", on east line of NE¼ sec.8, T.21 N., R.25 E., Grant County, at county road 6 mi (9.7 km) north of Winchester and 7 mi (11.3 km) west of Ephrata.	-	1959‡-	3-11-76	.47
Paha Coulee tributary	Rocky Coulee	Lat 47°03'03", long 118°25'26", in sec.16, T.18 N., R.35 E., Adams County, at U.S. Highway 395, 6 mi (9.7 km) southwest of Ritzville.	8.52	1962-74a	2-13-69 1-15-70	c 28.8 c .49
Webber Coulee tributary	Webber Coulee	Lat 47°08'25", long 118°52'20", in SW¼NW¼ sec.13, T.19 N., R.31 E., Adams County, at county road 6 mi (9.7 southeast of Ruff.	.95	1959-72a	2-12-69 2-14-69 2-20-69	c 8.20 c 6.62 c 3.26
		Schnebly Coulee basin				
Schnebly Coulee tributary	Schnebly Coulee	Lat 46°57'44", long 120°08'47", in NW¼SW¼ sec.13, T.17 N., R.21 E., Kittitas County, at county road, 8.5 mi (13.7 km) west of Vantage.	0.82	1955-74a	3-17-69	c 12.9
		Yakima River basin				
Mosquito Creek	Yakima River	Lat 47°17'32", long 121°19'23", in SE¼ sec.22, T.21 N., R.12 E., Kittitas County, at Forest Service road, 2 mi (3.2 km) southeast of Keechelus Dam and 8 mi (12.9 km) northwest of Easton.	1.07	1968-76a	6- 5-59 11- 4-69 5-27-70 6-22-71 5-31-72 5-17-73 5- 8-74 7-29-75	c 25.4 c 4.35 c 19.6 c 33.9 c 49.3 c 18.2 c 29.3 c .72

‡ Operated as continuous-record station.
a Operated as crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Yakima River basin--Continued				
Box Canyon tributary	Box Canyon	Lat 47°22'57", long 121°15'42", near center of sec.19, T.22 N., R.13 E., Kittitas County, at Forest Service road 2.5 mi (4.0 km) north of Kachess Guard Station, and 11 mi (17.7 km) northwest of Easton.	0.36	1969-76a,	6- 5-69 7- 7-70 6-22-71	c 4.15 c.23 c 2.78
Big Creek	Yakima River	Lat 47°12'44", long 121°06'09", in SE¼NW¼ sec.21, T.20 N., R.14 E., Kittitas County, at Interstate 90, 3.5 mi (5.6 km) southeast of Easton.	27.4	1909-10, 1912, 1967, 1970, 1973	12- 3-75 12- 5-75	936 571
Thornton Creek	Do......	Lat 47°09'22", long 120°51'34", in SE¼NE¼ sec.8, T.19 N., R.16 E., Kittitas County, at county road 0.8 mi (1.3 km) upstream from mouth and 4.5 mi (7.2 km) southeast of Cle Elum.	.66	1971-76a	4-16-75	c 1.43
Hovey Creek	Swauk Creek	Lat 47°19'05", long 120°41'32", on line between secs.10 and 15, T.21 N., R.17 E., Kittitas County, at U.S. Highway 97, 2.5 mi (4.0 km) south of Blewett Pass and 14.5 mi (23.3 km) northeast of Cle Elum.	-	1955-74a, 1961, 1967	4-23-69 4-15-70 5-27-70 9-17-70 5-10-71 6- 5-74	c 25.5 c 4.05 c 5.29 c.05 c 24.1 c 10.2
South Fork Manastash Creek tributary	South Fork Manastash Creek	Lat 46°57'40", long 120°45'41", in NE¼SW¼ sec.18, T.17 N., R.17 E., Kittitas County, at county road, 10.5 mi (16.9 km) west of Ellensburg.	2.12	1955-74a	4-25-69 3-11-70 3-31-71	c.48 c 3.01 c 5.15
Johnson Creek tributary	Johnson Creek	Lat 46°58'41", long 120°14'24", in NE¼SE¼ sec.7, T.17 N., R.21 E., Kittitas County, at county road, 8.5 mi (13.7 km) east of Kittitas.	.65	1956-75a	3-17-69	c 5.29
McPherson Canyon	Yakima River	Lat 46°50'03", long 120°27'12", in SW¼NE¼ sec.33, T.16 N., R.19 E., Kittitas County, at U.S. Highway 97, 0.5 mi (0.8 km) northwest of Wymer.	5.48	1952a, 1955-76a, 1963, 1967	3-18-69 3-11-70	c.68 c 1.59
Roza Canal	Do......	Lat 46°24'58", long 120°09'59", in NE¼NE¼ sec.27, T.11 N., R.21 E., Yakima County, 4 mi (6.4 km) east-northeast of Zillah.	-	1975-	3-23-76	430
Pump 9A Lateral	Do......	Lat 46°24'24", long 120°01'04", in NW¼NW¼ sec.36, T.11 N., R.22 E., Yakima County, 50 ft (15 m) below Scoon Road, and 5.5 mi (8.8 km) north of Sunnyside.	-	-	4-27-76 6- 2-76 7-21-76	2.25 10.8 20.3
Roza Canal	Do......	Lat 46°23'25", long 120°01'07", in SW¼SW¼ sec.36, T.11 N., R.22 E., Yakima County, at Scoon Road 4 mi (6.4 km) north of Sunnyside.	-	-	3-23-76 4-30-76 6-22-76 9- 3-76	321 444 620 525
Do......	Do......	Lat 46°22'20", long 119°57'27", in NE¼NE¼ sec.8, T.10 N., R.22 E., Yakima County, at gage below Sulphur Creek Wasteway, 3.5 mi (5.6 km) northeast of Sunnyside.	-	-	3-19-76 4-28-76 6-22-76 9- 3-76	181 344 541 451
Do......	Do......	Lat 46°20'49", long 119°53'53", in SE¼SE¼ sec.14, T.10 N., R.23 E., Yakima County, at Black Canyon Creek crossing, 5.0 mi (8.0 km) northeast of Sunnyside.	-	-	3-19-76 6-22-76 4-27-76 9- 3-76	170 469 310 412
Turbine Lateral Canal	Do......	Lat 46°18'18", long 119°53'53", in SE¼SE¼ sec.35, T.10 N., R.23 E., Yakima County, 1.5 mi (2.4 km) below diversion from Roza Canal, and 3.6 mi (5.8 km) north of Grandview.	-	-	4-29-76 6- 3-76 7-21-76	20.2 31.2 33.1
Do......	Do......	Lat 46°16'15", long 119°51'11", in NE¼NE¼ sec.18, T.9 N., R.24 E., Benton County, 0.2 mi (0.3 km) upstream from Griffin Road, and 2.5 mi (4.0 km) northeast of Grandview.	-	-	4-29-76 6- 3-76 7-21-76	10.2 14.1 16.2
Lower Pump 14 Lateral Canal	Do......	Lat 46°17'57", long 119°49'19", in NW¼NW¼ sec.4, T.9 N., R.24 E., Yakima County, 800 ft (244 m) downstream from Wilgus Road, and 4.0 mi (6.4 km) northwest of Grandview.	-	-	4-29-76 6- 3-76 7-21-76	10.2 15.6 16.8
Upper Pump 14 Lateral Canal	Do......	Lat 46°18'22", long 119°48'35", in NE¼SE¼ sec.33, T.10 N., R.24 E., Benton County, 20 ft (6.1 m) above diversion just above Missimer Road, and 5.5 mi (8.8 km) northwest of Grandview.	-	-	4-29-76 6- 3-76 7-21-76	10.2 10.1 16.1
Roza Canal	Do......	Lat 46°17'22", long 119°49'48", in SW¼SW¼ sec.4, T.9 N., R.24 E., Benton County, at Wilgus Road 4 mi (6.4 km) northeast of Grandview.	-	1975-	3-19-76 4-29-76 6-21-76	163 224 310
Do......	Do.....	Lat 46°19'02", long 119°53'28", in NW¼NW¼ sec.36, T.10 N., R.23 E., Yakima County, at Factory Road 4.3 mi (6.9 km) north of Grandview.	-	-	3-19-76 4-15-76 6-22-76 9-20-76	190 252 371 313
Pine Canyon	Wenas Creek	Lat 46°49'11", long 120°40'16", in SW¼NW¼ sec.2, T.15 N., R.17 E., Yakima County, at county road, 6.5 mi (10.5 km) northeast of Naches.	2.26	1961-76a, 1963	3-20-69 3-13-70	c 1.41 c.78
Wenas Creek	Do......	Lat 46°30'02", long 120°31'10", in NE¼NW¼ sec.13, T.14 N., R.19 E., Yakima County, 4 mi (6.4 km) north of Selah at Wenas Road crossing.	186	1975-	3-10-76 4- 9-76 6-28-76 9-21-76	13.8 282 1.53 2.09

a Operated as crest-stage gage.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Yakima River basin--Continued				
Deep Creek	Bumping River	Lat 46°47'30", long 121°19'30", in NW¼ sec.15, T.15 N., R.12 E., Yakima County, at Forest Service road 4.2 mi (6.8 km) above mouth and 8 mi (12.9 km) southwest of Goose Prairie.	12.7	1966-75a, 1965-67	6-10-69 7-23-69 11-11-69 6-22-71 7-20-72 7-31-75 9-24-75	c 287 c 10.6 c 26.2 c 274 c 144 c 24.8 c 6.00
American River tributary	American River	Lat 46°57'59", long 121°15'19", in NW¼NW¼ sec.17, T.17 N., R.13 E. (unsurveyed), Yakima County, at U.S. Highway 410, 19 mi (30.6 km) northwest of Nile.	1.10	1955-74a, 1959, 1963-65, 1967	6- 2-70 6-22-71 5-17-72	c 16.7 c 10.0 c 19.0
Hause Creek	Tieton River	Lat 46°40'33", long 121°04'49", in NE¼ sec.28, T.14 N., R.14 E., Yakima County, at State Highway 14, 0.1 mi (0.2 km) west of Tieton Ranger Station and 2.5 mi (4.0 km) east of Rimrock.	3.91	1955-76a, 1967	11-10-69 4- 2-71 9-25-75 12- 3-75	c.41 c 6.27 c.40 31.1
Wide Hollow Creek	Yakima River	Lat 46°32'19", long 120°28'17", in SE¼SW¼ sec.8, T.12 N., R.19 E., Yakima County, at private road to Union Gap sewerage plant.	64.8	1975-	3- 3-76 4-15-76 8-31-76	15.1 44.6 44.5
Moxee Drain	Do......	Lat 46°32'46", long 120°26'13", in SE¼NW¼ sec.10, T.12 N., R.19 E., Yakima County, 2 mi (3.2 km) southeast of Yakima.	-	1975-	4-13-76 3-10-76 7-16-76 9-28-76	49.1 8.59 65.5 76.3
Sunnyside Canal	Do......	Lat 46°22'39", long 120°09'59", in SW¼SW¼ sec.2, T.10 N., R.21 E., Yakima County, 4 mi (6.5 km) east-southeast of Zillah.	-	1975-	4- 1-76	393
Outlook Canal	Do......	Lat 46°22'16", long 120°02'21", in NW¼NW¼ sec.11, T.10 N., R.22 E., Yakima County, 50 ft (15 m) below Independence Road, and 3.5 mi (5.6 km) northwest of Sunnyside.	-	-	4-27-76 6- 2-76 7-21-76	12.7 19.5 23.7
Sunnyside Canal	Do......	Lat 46°21'27", long 120°02'22", in NW¼NW¼ sec.14, T.10 N., R.22 E., Yakima County, at Maple Grove Road, 2 mi (3.2 km) northwest of Sunnyside.	-	-	4- 1-76 4-27-76 6-22-76 8-18-76	423 696 814 822
Do......	Do......	Lat 46°20'48", long 119°58'20", in SE¼SW¼ sec.17, T.10 N., R.23 E., Yakima County, at gage below Sulphur Creek Wasteway, 2 mi (3.2 km) northeast of Sunnyside.	-	-	4- 1-76 4-28-76 6-22-76 8-18-76	147 593 730 706
Do......	Do......	Lat 46°19'26", long 119°56'14", in NE¼SE¼ sec.28, T.10 N., R.23 E., Yakima County, at Edison Road, 3 mi (4.8 km) east of Sunnyside.	-	-	4- 1-76 4-28-76 6-22-76 8-18-76	147 618 706 685
Do......	Do......	Lat 46°17'45", long 119°55'29", in SE¼NE¼ sec.3, T.9 N., R.23 E., Yakima County, at Bethnay Road 3 mi (4.8 km) northwest of Grandview.	-	-	4- 1-76 4-28-76 6-22-76 8-18-76	148 567 660 632
Do......	Do......	Lat 46°15'32", long 119°53'25", in NW¼NW¼ sec.24, T.9 N., R.23 E., Yakima County, northeast edge of Grandview.	-	1975-	3-29-76 4- 2-76 4-15-76 6-22-76 8-18-76	.30 155 427 598 588
Grandview Canal	Do......	Lat 46°16'15", long 119°52'22", in NE¼NE¼ sec.13, T.9 N., R.23 E., Yakima County, 50 ft (15 m) downstream from county line road, and 1.8 mi (2.9 km) northeast of Grandview.	-	-	4-29-76 6- 2-76 7-21-76	4.38 4.09 4.01
Granger Drain	Do......	Lat 46°20'37", long 120°11'09", in NW¼NW¼ sec.22, T.10 N., R.21 E., Yakima County, in a feedlot in Granger.	-	1975-	3- 3-76 4-26-76 8-17-76 9-30-76	22.2 47.1 63.6 57.1
North Medicine Creek	Toppenish Creek	Lat 46°26'53", long 120°48'09", in SW¼SE¼ sec.10, T.11 N., R.16 E., Yakima County, at county road crossing, 6.9 mi (11.1 km) upstream from mouth, and 7.1 mi (11.4 km) northwest of White Swan.	1.53	1974-76a	2-14-75	c.89
Shinando (formerly Shenando) Creek	Shinando Creek	Lat 46°00'17", long 120°38'32", in NE¼ sec.14, T.6 N., R.17 E., Klickitat County, at U.S. Highway 97, 2 mi (3.2 km) northwest of Satus Pass, and 14 mi (22.5 km) northeast of Goldendale.	.38	1955-74a	1-27-70	c 1.05
Satus Creek	Do......	Lat 46°17'25", long 120°13'12", in SE¼SW¼ sec.5, T.9 N., R.21 E., Yakima County, 3.5 mi (5.6 km) southwest of Granger.	560	1975-	3-10-76 5-25-76 8-17-76	156 68.8 38.7

a Stages only.
c Not previously published.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Yakima River basin--Continued				
Satus Creek tributary	Satus Creek	Lat 46°05'27", long 120°32'57", in NW¼SW¼ sec.15, T.7 N., R.18 E., Yakima County, on U.S. Highway 97, 23 mi (37.0 km) south of Toppenish.	8.54	1953a, 1956a, 1961a, 1963-76a, 1968	3-21-69 1-27-70 4- 5-71 12- 3-73	c 22.5 c 33.0 c 4.29 c 4.13
Yakima River tributary	Washout Drain	Lat 46°25'20", long 119°56'23", in SW¼SE¼ sec.21, T.11 N., R.23 E., Yakima County, at Hanford Road 7 mi (11.3 km) northeast of Sunnyside.	1.91	1954-73a	2-13-69	c 4.20
Washout Drain	Sulphur Creek Wasteway	Lat 46°18'35", long 119°59'24", in SE¼NW¼ sec.31, T.10 N., R.23 E., Yakima County, 0.3 mi (0.5 km) above Sulphur Creek Wasteway, and 1.0 mi (1.6 km) southeast of Sunnyside.	26.2	---	4- 5-76 5- 3-76 6- 3-76 8- 6-76	8.41 10.2 12.6 14.8
Grandview Drain	Yakima River	Lat 46°13'46", long 119°55'28", in NW¼NE¼ sec.34, T.9 N., R.23 E., Yakima County, 1.2 mi (1.9 km) south of Grandview.	---	1975-	3- 9-76 4-29-76 7-15-76 9-30-76	3.88 11.2 20.9 17.4
Wamba Drain	Do......	Lat 46°12'53", long 119°16'44", in NE¼NW¼ sec.2, T.8 N., R.24 E., Benton County, 0.5 mi (0.8 km) northwest of Prosser.	---	1975-	3- 9-76 7-15-76 9-24-76	1.49 11.0 9.84
Shelby Drain	Do.......	Lat 46°13'19", long 119°15'24", in SW¼NE¼ sec.36, T.9 N., R.24 E., Benton County, 1.0 mi (1.6 km) northeast of Prosser.	---	1975-	3- 2-76 4- 8-76 7-23-76 9-30-76	e .04 2.37 8.26 9.25
Spring Creek	Do......	Lat 46°14'02", long 119°41'02", in NW¼SW¼ sec.27, T.9 N., R.25 E., Benton County, 4 mi (6.4 km) northeast of Prosser.	44.7	1975-	3- 9-76 4-15-76 6-30-76 9- 2-76	3.88 55.9 38.3 57.4
Snipes Creek tributary	Snipes Creek	Lat 46°20'15", long 119°39'30", in NW¼SW¼ sec.23, T.10 N., R.25 E., Benton County, at Sharp Road 10 mi (16.1 km) northwest of Benton City.	5.18	1967-76a, 1965	2-14-69	c 6.44
Snipes Creek	Spring Creek	Lat 46°14'32", long 119°40'48", in NW¼NW¼ sec.27, T.9 N., R.25 E., Benton County, 4.5 mi (7.2 km) northeast of Prosser.	33.6	1975-	3- 9-76 4- 8-76 6-30-76 9- 3-76	.84 96.3 39.1 82.1
Corral Canyon	Yakima River	Lat 46°17'03", long 119°32'06", in NW¼NW¼ sec.11, T.9 N., R.26 E., Benton County, 3 mi (4.8 km) west of Benton City, at road crossing 0.5 mi (0.8 km) above mouth.	25.1	1975-	3- 2-76 6-30-76 8-30-76	2.70 23.9 33.8
Cold Creek tributary	Cold Creek	Lat 46°35'38", long 119°51'44", in SW¼SE¼ sec.19, T.13 N., R.24 E., Benton County, at Cold Creek road 4 mi (6.4 km) southeast of Priest Rapids Dam.	.89	1967-75a	2-13-69	c .72
		Esquatzel Coulee basin				
Hatton Coulee tributary No.2	Hatton Coulee	Lat 46°49'24", long 118°41'49", in SE¼SE¼ sec.32, T.16 N., R.33 E., Adams County, at county road crossing, 5 mi (8.0 km) east of Cunningham.	2.44	1961-76a	2-12-69	c 34.6
Hatton Coulee tributary	Do......	Lat 46°45'50", long 118°47'56", in NE¼ sec.28, T.15 N., R.32 E., Adams County, 300 ft (91 m) above mouth and 1.5 mi (2.4 km) southeast of Hatton.	3.71	1956-76a	2-12-69	c 26.2
Dunningan Coulee	Esquatzel Coulee	Lat 46°34'39", long 118°51'26", in SE¼SE¼ sec.25, T.13 N., R.31 E., Franklin County, on U.S. Highway 395, about 6 mi (9.7 km) south of Connell.	27.1	1963-76a, 1956	2-13-69 2-14-69	c 37.0 c 28.0
		Tenmile Creek Basin				
Mill Creek	Tenmile Creek	Lat 46°08'04", long 117°07'51", in SW¼SE¼ sec.26, T.8 N., R.45 E., Asotin County, at county road in Anatone.	2.74	1971-76a	1-18-71 3- 2-72 4-18-72 4-24-73 12- 4-73 4- 2-74 5-21-74 6-17-74	c 5.50 c 26.1 c 7.3 c .62 c 1.04 c 17.0 c 1.34 e .02
		Asotin Creek basin				
Pintler Creek	George Creek	Lat 46°07'59", long 117°09'56", in NE¼NE¼ sec.33, T.8 N., R.45 E., Asotin County, at county road 1.7 mi (2.7 km) west of Anatone.	0.86	1971-76a	3- 2-72 4-18-72 12- 4-73 4- 2-74 5- 2-74 5- 5-76	c 8.06 c 2.99 c,e .16 c 8.46 c,e .82 2.11
Maguire Gulch	Asotin Creek	Lat 46°19'47", long 117°06'33", in NW¼SE¼ sec.24, T.10 N., R.45 E., Asotin County, 0.3 mi (0.5 km) upstream from mouth, and 3.0 mi (4.8 km) west of Asotin.	---	---	8- 3-76	4,620

a Operated as crest-stage gage.
c Not previously published.
e Estimated.

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Alpowa Creek basin						
Alpowa Creek	Pataha Creek	Lat 46°19'03", long 117°29'28", in SW¼NE¼ sec.25, T.10 N., R.42 E., Garfield County, at State Highway 128, 0.8 mi (1.3 km) northwest of Peola.	0.50	1972-76a	5-15-75	c 0.10
Clayton Gulch	Alpowa Creek	Lat 46°26'52", long 117°17'36", in NE¼SE¼ sec.9, T.11 N., R.44 E., Garfield County, at private road, 1.5 mi (2.4 km) northeast of Alpowa and 10 mi (16.1 km) northwest of Clarkston.	5.60	1961-76a	3-19-69 5- 7-69 9-11-75	c 7.64 c .34 c .16
Deadman Creek basin						
South Fork Deadman Creek tributary	South Fork Deadman Creek	Lat 46°28'45", long 117°24'48", in SE¼NW¼ sec.34, T.12 N., R.43 E., Garfield County, at county road 6 mi (9.7 km) east of Pataha.	0.54	1961-76a	3-19-69	c 0.28
Smith Gulch	Deadman Creek	Lat 46°29'24", long 117°26'42", in SE¼ sec.29, T.12 N., R.43 E., Garfield County, at Eureka Road, 4.2 mi (6.8 km) northeast of Pataha.	1.85	1955-74a	3-19-69	c 1.07
Meadow Creek	Do......	Lat 46°35'51", long 117°46'54", in SE¼NW¼ sec.22, T.13 N., R.40 E., Garfield County, on right bank 5 ft (2 m) downstream from county bridge, 1.3 mi (2.1 km) upstream from mouth, 2.0 mi (3.2 km) southeast of Central Ferry, and 5.4 mi (8.7 km) north of Dodge.	66.2	1963-74‡, 1975-76a	10- 1-74 1-22-75 5-15-75 9-11-75	c 2.58 c 4.57 c 3.83 c 1.72
Tucannon River basin						
Kellogg Creek tributary	Kellogg Creek	Lat 46°28'46", long 118°06'47", in SW¼NW¼ sec.31, T.12 N., R.38 E., Columbia County, at Kellogg Creek road 2.8 mi (4.5 km) southeast of Starbuck.	2.95	1970-76a	1-20-70 2- 8-72	c 0.26 c .52
Palouse River basin						
Missouri Flat Creek tributary	Missouri Flat Creek	Lat 46°45'52", long 117°10'01", in SW¼SE¼ sec.20, T.15 N., R.45 E., Whitman County, at county road to Whelan Grange, 1.5 mi (2.4 km) north of Pullman city limits.	h 0.88	1955-74a, 1964	3- 4-69 11-22-71 3- 2-72 12- 5-73 1-23-74 4- 1-74	c 1.15 c,e.01 c 16.9 c,e.68 c 1.72 c 2.40
Hardman Draw tributary	Hardman Draw	Lat 47°18'36", long 117°23'14", in NW¼SW¼ sec.16, T.21 N., R.43 E., Spokane County, at U.S. Highway 195, 0.7 mi (1.1 km) south of Plaza.	1.64	1955-74a, 1963-64	3- 6-72 12-26-72 12- 3-73 1-21-74	c .71 c .06 c,e.03 c,e 1.5
Rock Creek	Palouse River	Lat 47°08'27", long 117°43'26", in NW¼SW¼ sec.13, T.19 N.,R.40 E., Whitman County, at outlet of Rock Lake, 1.6 mi (2.6 km) northeast of Ewan.	523	1955-74a	1-14-69 3- 7-69 4- 3-69 10-16-69 1-19-71 3- 7-72	c 166 c 241 c 1,090 c 1.25 c 1,060 c 574
Cow Creek	Do......	Lat 46°45'46", long 118°08'46", in NW¼NW¼ sec.26, T.15 N., R.37 E., Adams County, on county road bridge, 0.5 mi (0.8 km) upstream from mouth and (0.5 mi (0.8 km) north of Hooper.	679	1951-54‡, 1962-70‡, 1971-76a	2-27-74 5-28-75 9-11-75	c 305 c 141 c 25.4
Walla Walla River basin						
Spring Creek tributary	Spring Creek	Lat 46°06'15", long 118°11'21", in N½ sec.9, T.7 N., R.37 E., Walla Walla County, at Spring Creek road, about 200 ft (61 m) above mouth, and 7 mi (11.3 km) northeast of Walla Walla.	1.94	1955-74a, 1959, 1967	11-12-70	c 0.30
Hatley Creek	East Fork Touchet River	Lat 46°16'52", long 117°53'37", on line between secs.2 and 11, T.9 N., R.39 E., Columbia County at North Fork Touchet River road, 5 mi (8.0 km) southeast of Dayton.	4.12	1955-74a, 1967	12- 3-68 4-24-69	c 1.21 c 2.22
Davis Hollow	Do......	Lat 46°18'00", long 117°57'10", in NE¼SE¼ sec.32, T.10 N., R.39 E., Columbia County, at county road 200 ft (61 m) above mouth and 2 mi (3.2 km) southeast of Dayton.	3.01	1956-75a, 1967	3- 6-69 2-18-70 3-20-75	c .98 c .64 c .91
Thorn Hollow	Whetstone Hollow	Lat 46°20'50", long 118°03'55", in center of sec.16, T.10 N., R.38 E., Columbia County, at Thorn Hollow Road 4 mi (6.4 km) northwest of Dayton.	2.68	1962-76a, 1967-68	3- 8-69 2-18-70 9-12-75	c .26 c 1.01 c .10
East Fork McKay Creek	McKay Creek	Lat 46°21'47", long 118°07'57", in SW¼NW¼ sec.12, T.10 N., R.37 E., Columbia County, at county road 1.7 mi (2.7 km) southwest of Alto.	4.92	1963-76a, 1964, 1967-68	10-25-68 5- 8-69 2-17-70 5-16-75 9-12-75	c .44 c .69 c 1.42 c .68 c .60
Glade Creek basin						
East Branch Glade Creek tributary	East Branch Glade Creek	Lat 46°07'39", long 119°43'10", on north line sec.5, T.7 N., R.25 E., Benton County, at county road 6 mi (9.7 km) southeast of Prosser.	0.77	1962-76a	2-12-69	c 18.1

‡ Operated as continuous-record station.
a Operated as crest-stage gage.
c Not previously published.
h Prior to July 1, 1963m at site 0.3 mi (0.5 km) downstream, having drainage area of 1.22 mi^2 (3.16 km^2).

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Alder Creek basin				
Alder Creek	Columbia River	Lat 45°59'49", long 120°16'31", in NE¼NW¼ sec.23, T.6 N., R.20 E., Klickitat County, at county road 1.3 mi (2.1 km) east of Bickleton.	8.35	1963-76a, 1964-65, 1967	3- 7-73 1-23-74 4- 3-75	c 1.03 c 10.0 c 3.84
		Klickitat River basin				
Klickitat River	Columbia River	Lat 46°05'20", long 121°15'30", in SE¼ sec.14, T.7 N., R.12 E., Yakima County, 0.4 mi (0.6 km) downstream from Dairy Creek and 5.2 mi (8.4 km) north of Glenwood.	360	1909-71‡, 1972-76a, 1974-	8-13-74 9-18-74 5-25-76	c 839 c 540 1,760
Medley Canyon Creek	Holmes Creek	Lat 45°56'47", long 121°18'13", in NE¼SE¼ sec.4, T.5 N., R.12 E., at county road 5 mi (8.0 km) south of Glenwood.	1.26	1970-76a	1-14-70 1-18-71 3-10-72 3- 6-73 1-22-74 4- 1-75 4-13-76	c 2.60 c 17.0 c 8.73 c 2.61 c 8.74 c 2.99 3.25
West Prong Little Klickitat River	Little Klickitat River	Lat 45°55'30", long 120°43'11", in NE¼ sec.18, T.5 N., R.17 E., Klickitat County, at private logging road 9 mi (14.5 km) northeast of Goldendale.	10.4	1961-75a	1-28-70 4- 5-71 8-24-73 12- 3-73 12-13-74 9-19-75	c 29.0 c 20.6 c .72 c 13.1 c 2.77 c 1.26
Little Klickitat River	Klickitat River	Lat 45°50'40", long 120°47'42", in NE¼SW¼ sec.10, T.4 N., R.16 E., Klickitat County, 400 ft (122 m) upstream from State Highway 97 bridge, and 2.1 mi (3.4 km) northeast of Goldendale.	83.5	1911-12‡, 1947-51‡, 1958-70‡, 1971-76a	8-25-73 9-19-75 3-17-76	c .20 c 4.52 c 95.5
Mill Creek	Little Klickitat River	Lat 45°51'34", long 120°57'49", in NW¼SW¼ sec.5, T.4 N., R.15 E., Klickitat County, on left bank 1.9 mi (3.1 km) northwest of Blockhouse and 3.5 mi (5.6 km) upstream from mouth.	26.9	1964-72‡, 1973-76a	8-24-73	c 1.05
Bowman Creek	Do......	Lat 45°50'56", long 121°01'27", in SE¼NW¼ sec.10, T.4 N., R.14 E., Klickitat County, at road crossing 0.5 mi (0.8 km) downstream from Canyon Creek, 0.5 mi (0.8 km) upstream from mouth, and 3.2 mi (5.1 km) northeast of Wahkiacus.	60.1	1961, 1965, 1974-75a,	9-19-75 4-13-76	5.54 105

‡ Operated as continuous-record station.
a Operated as crest-stage gage.
c Not previously published.

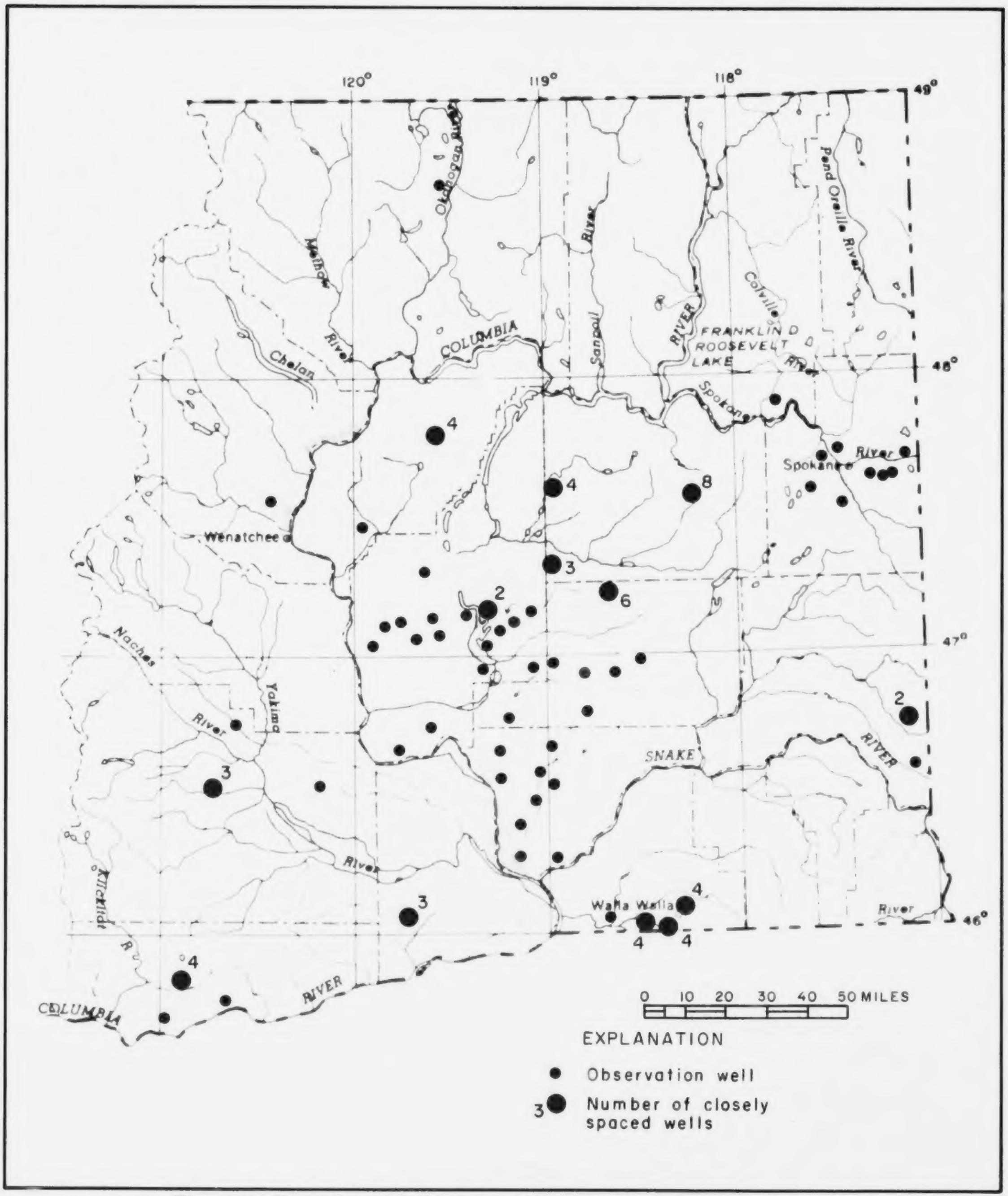
120°
119°
118°
49°
48°
47°
46°
Okanogan River
Methow River
Chelan
COLUMBIA
Sanpoil River
RIVER
Colville River
Pend Oreille River
FRANKLIN D ROOSEVELT LAKE
Spokane River
Spokane
River
Wenatchee
Naches River
Yakima
SNAKE
RIVER
Walla Walla
River
Klickitat R
COLUMBIA
RIVER
4
4
8
3
2
6
2
3
3
4
4
4
4
0 10 20 30 40 50 MILES
EXPLANATION
Observation well
3 Number of closely spaced wells

Figure 18. Map of Eastern Washington showing locations of ground-water level observations.

GROUND-WATER LEVELS

ADAMS COUNTY

464603119085201 Local number, 15/29-26C1.
LOCATION.--Lat 46°46'03", long 119°08'52", Hydrologic Unit 17020016, at Othello.
Owner: Brick Patterson.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 257 ft (78.3 m), cased to 150 ft (45.7 m).
DATUM.--Land-surface datum about 1,030 ft (314 m) above mean sea level.
PERIOD OF RECORD.--September 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 96.71 ft (29.477 m) below land-surface datum, Dec. 16, 1975; lowest measured, 197.91 ft (60.323 m) below land-surface datum, Apr. 2, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	142.67	Feb. 9, 1976	140.68	May 26, 1976	144.12	Sept. 4, 1976	178.31
Dec. 16	96.71	Apr. 2	149.9	July 20	147.98		

464740118444001. Local Number 15/32-13D1
LOCATION.--Lat 46°47'40", long 118°44'40", Hydrologic Unit 17020016.
Owner: State of Washington, Department of Highways.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 12 in (300 mm), depth 602 ft (183.5 m), cased to 63 ft (19.2 m).
DATUM.--Land-surface datum about 1,216 ft (370.6 m) above mean sea level.
PERIOD OF RECORD.--June 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 170.12 ft (51.853 m) below land-surface datum, Nov. 25, 1962; lowest measured, 188.61 ft (57.488 m) below land-surface datum, Oct. 5, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	183.72B	Feb. 9, 1976	182.37	May 27, 1976	182.88A	Sept. 7, 1976	184.20B
Dec. 15	182.60	Apr. 8	182.6 A	July 22	183.65A		

465700118510001. Local number, 17/32-19E1.
LOCATION.--Lat 46°57'00", long 118°51'00", Hydrologic Unit 17020015, at Roxboro.
Owner. **The Milwaukee** Road.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (150 mm), depth 258 ft (78.6 m).
DATUM.--Land-surface datum about 1,260 ft (384 m) above mean sea level.
PERIOD OF RECORD.--June 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 104.96 ft (31.992 m) below land-surface datum, Jan. 29, 1963; lowest measured, 184.96 ft (56.376 m) below land-surface datum, July 21, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	175.38	Feb. 9, 1976	162.86	May 27, 1976	181.	Sept. 7, 1976	183.7
Dec. 15	166.87	Apr. 2	164.3	July 21	184.96		

465730118410001. Local number, 17/33-17R1.
LOCATION.--46°57'30", 118°41'00", Hydrologic unit, 17020015.
Owner: D. E. Phillips.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 10 in (250 mm), depth 184 ft (56.1 m), cased to 80 ft (24.4 m).
DATUM.--Land-surface datum about 1,310 ft (399.3 m) above mean sea level.
REMARKS.--Pump installed December 1974.
PERIOD OF RECORD.--April 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.40 ft (9.876 m) below land-surface datum, June 16, 1975; lowest measured, 47.32 ft (14.423 m) below land-surface datum, Jan. 29, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	44.16	Mar. 10, 1976	34.15	May 27, 1976	39.53	Sept. 7, 1976	41.27A
Dec. 15	41.28B	Apr. 8	35.34	July 22	36.48		

A Well being pumped.
B Well pumped recently.

465824118354903. Local number 17/34-7N1.
LOCATION.--Lat 46°58'24", long 118°35'49", Hydrologic Unit 17020015.
Owner: City of Lind.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled public-supply water-table.well, diameter 16 to 12 in (400 to 300 m), depth 686 ft (209.1 ft), cased to 75 ft (22.9 m).
DATUM.--Land-surface datum about 1,404 ft (427.9 m) above mean sea level.
PERIOD OF RECORD.--June 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 105.60 ft (32.187 m) below land-surface datum, Apr. 7, 1969; lowest measured, 140.07 ft (42.693 m) below land-surface datum, Sept. 26, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	136.18	Feb. 9, 1976	129.28	May 27, 1976	135.15	Sept. 7, 1976	138.07
Dec. 15	133.39	Apr. 8	126.41	July 22	138.07		

465910118581001. Local number, 17/31-6P1.
LOCATION.--Lat 46°59'10", long 118°58'10", Hydrologic Unit 17020015, at Lind.
Owner: D. E. Phillips.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 129 ft (39.3 m).
DATUM.--Land-surface datum about 1,217 ft (370.9 m) above mean sea level.
PERIOD OF RECORD.--May 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.11 ft (8.568 m) below land-surface datum, Dec. 3, 1974; lowest measured, 72.87 ft (22.211 m) below land-surface datum, May 25, 1954.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	30.09	Feb. 10, 1976	31.89	July 21, 1976	33.3	Sept. 8, 1976	32.0
Dec. 16	30.43	May 26	35.0 B				

471347118410101. Local number, 20/33-16E1.
LOCATION.--Lat 47°13'47", long 118°41'01", Hydrologic Unit 17020015, near Odessa.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test water-table well, diameter 10 in (250 mm), total depth 750 ft (228.6 m), uncased depth interval from 70 to 94 ft (21.3 to 28.7 m).
DATUM.--Land-surface datum is 1,670 ft (509 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--April 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 80.34 ft (24.488 m) below land surface datum, June 20, 1975; lowest measured, 93.38 ft (28.462 m) below land-surface datum, Apr. 23, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	80.88	Jan. 8, 1976	80.9	Mar. 29, 1976	81.16	July 19, 1976	81.19
Oct. 30	80.6	Feb. 13	80.67	May 7	81.0	Aug. 24	81.4
Dec. 19	81.16	Mar. 2	80.9	June 29	80.8	Sept. 10	81.10

471347118410102. Local number, 20/33-16E2.
LOCATION.--47°13'47", 118°41'01", Hydrologic Unit 17020015, near Odessa.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test artesian well, diameter 10 in (250 mm), total depth 750 ft (228.6 m), uncased depth interval from 158 to 183 ft (48.2 to 55.8 m).
DATUM.--Land-surface datum is 1,670 ft (509 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--April 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 107,35 ft (32.720 m) below land-surface datum, Mar. 23, 1972; lowest measured, 128.73 ft (39.237 m) below land-surface datum, Sept. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	126.77	Jan. 8, 1976	120.2	Mar. 29, 1976	117.90	July 19, 1976	127.28
Oct. 30	126.69	Feb. 13	117.47	May 7	122.17	Aug. 24	128.44
Dec. 19	121.87	Mar. 2	116.39	June 29	126.30	Sept. 10	128.73

B Well pumped recently.

471347118410103. Local number 20/33-16E3.

LOCATION.--Lat 47°13'47", long 118°41'01", Hydrologic Unit 17020015, near Odessa.

Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 750 ft (228.6 m), uncased depth interval from 282 to 299 ft (86.0 to 91.1 m).

DATUM.--Land-surface datum 1,670 ft (509 m) above mean sea level.

REMARKS.--Water-level measured in piezometer.

PERIOD OF RECORD.--April 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 109.89 ft (33.494 m) below land-surface datum, Feb. 23, 1972; lowest measured, 139.32 ft (42.465 m) below land-surface datum, Sept. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	138.12	Jan. 8, 1976	121.4	Mar. 29, 1976	125.98	July 19, 1976	138.52
Oct. 30	135.83	Feb. 13	119.69	May 7	133.10	Aug. 24	138.87
Dec. 19	125.23	Mar. 2	118.50	June 29	137.55	Sept. 10	139.32

471347118410104. Local number, 20/33-16E4.

LOCATION.--Lat 47°13'47". long 118°41'01", Hydrologic Unit 17020015, near Odessa.

Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 750 ft (228.6 m), uncased depth interval from 352 to 401 ft (107.3 to 122.2 m).

DATUM.--Land-surface datum is 1,670 ft (509 m) above mean sea level.

REMARKS.--Water level measured in piezometer.

PERIOD OF RECORD.--April 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 106.46 ft (32.449 m) below land-surface datum, Mar. 23, 1972; lowest measured, 125.25 ft (38.176 m) below land-surface datum, Sept. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	123.73	Jan. 8, 1976	128.6	Mar. 29, 1976	115.75	July 19, 1976	123.60
Oct. 30	123.59	Feb. 13	116.03	May 7	118.60	Aug. 24	125.01
Dec. 19	120.05	Mar. 2	115.02	June 29	122.93	Sept. 10	125.25

471347118410105. Local number, 20/33-16E5.

LOCATION.--Lat 47°13'47", long 118°41'01", Hydrologic Unit 17020015, near Odessa.

Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 750 ft (228.6 m), uncased depth interval from 586 to 616 ft (178.6 to 187.8 m).

DATUM.--Land-surface datum is 1,670 ft (509 m) above mean sea level.

REMARKS.--Water measured in piezometer.

PERIOD OF RECORD.--April 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 112.35 ft (34.244 m) below land-surface datum, Feb. 23, 1972; lowest measured, 226.28 ft (68.970 m) below land-surface datum, Sept. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	221.02	Jan. 8, 1976	128.48	Mar. 29, 1976	200.51	July 19, 1976	222.48
Oct. 30	158.08	Feb. 13	124.50	May 7	215.37	Aug. 24	223.80
Dec. 19	131.76	Mar. 2	123.08	June 29	219.58	Sept. 10	226.28

471347118410106. Local number, 20/33-16E6.

LOCATION.--Lat 47°13'47", long 118°41'01", Hydrologic Unit 17020015, near Odessa.

Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 750 ft (228.6 m), uncased depth interval from 676 to 701 ft (206.0 to 213.7 m).

DATUM.--Land-surface datum is 1,670 ft (509 m) above mean sea level.

REMARKS.--Water level measured in piezometer.

PERIOD OF RECORD.--April 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 279.19 ft (85.097 m) below land-surface datum, Apr. 21, 1971; lowest measured, 379.98 ft (115.818 m) below land-surface datum, June 29, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 27, 1975	338.24	Jan. 8, 1976	310.22	Mar. 29, 1976	311.88	July 19, 1976	371.76
Oct. 30	334.89	Feb. 13	302.44	May 7	350.38	Aug. 24	367.05
Dec. 19	316.24	Mar. 2	299.98	June 29	379.98	Sept. 10	363.62

BENTON COUNTY

460237119383001. Local number, 7/25-36N1.
LOCATION.--Lat 46°02'37", long 119°38'30", Hydrologic Unit 17070101, near Paterson.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, water-table well, diameter 10 in (250 mm), total depth 860 ft (262.1 m), uncased depth interval from 105 to 185 ft (32.0 to 56.4 m).
DATUM.--Land-surface datum is 730 ft (222.5 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 101.4 ft (30.91 m) below land-surface datum, June 23, 1976; lowest measured, 133.50 ft (40.691 m) below land-surface datum, Nov. 1, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 4, 1975	105.5	Mar. 4, 1976	105.1	June 23, 1976	101.4	Aug. 25, 1976	105.2
Jan. 7, 1976	105.5						

460237119383003. Local number, 7/25-36N3.
LOCATION.--Lat 46°02'37", long 119°38'30", Hydrologic Unit, 17070101, near Paterson.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 860 ft (262.1 m), uncased depth interval from 720 to 755 ft (219.5 to 230.1 m).
DATUM.--Land-surface datum is 730 ft (222.5 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 365.40 ft (111.374 m) below land-surface datum, Feb. 7, 1973; lowest measured, 374.30 ft (114.087 m) below land-surface datum, Nov. 1, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 4, 1975	370.6	Mar. 4, 1976	368.4	June 23, 1976	368.1	Aug. 25, 1976	369.0
Jan. 7, 1976	370.8						

460237119383004. Local number, 7/25-36N4.
LOCATION.--Lat 46°02'37", long 119°38'30", Hydrologic Unit 17070101, near Paterson.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 m), total depth 860 ft (262.1 m), uncased depth interval from 770 to 860 ft (234.7 to 262.1 m).)
DATUM.--Land-surface datum is 730 ft (222.5 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 369.4 ft (112.59 m) below land-surface datum, June 23, 1976; lowest measured, 373.40 ft (113.812 m) below land-surface datum, Dec. 14, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 4, 1975	369.8	Mar. 4, 1976	369.7	June 23, 1976	369.4	Aug. 25, 1976	369.6
Jan. 7, 1976	369.8						

CHELAN COUNTY

473110120282001. Local number, 23/19-4E2.
LOCATION.--Lat 47°31'10", long 120°28'20", Hydrologic Unit 17020011, at Cashmere.
Owner: City of Cashmere.
AQUIFER.--Alluvial sand and gravel of Holocene Age.
WELL CHARACTERISTICS.--Dug public-supply water-table well, diameter 6 ft (1.8 m), depth 24 ft (7.3 m), lined with concrete.
DATUM.--Land-surface datum about 784 ft (239.0 m) above mean sea level.
PERIOD OF RECORD.--June 1945 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.04 ft (3.365 m) below land-surface datum, Feb. 1, 1972; lowest measured, 21.70 ft (6.614 m) below land-surface datum, Sept. 4, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 6, 1975	18.67	Jan. 29, 1976	16.52	May 21, 1976	16.55	Sept. 2, 1976	19.03
Dec. 12	16.10	Mar. 23	16.55	July 15	16.92		

472648119525001. Local number, 23/23-36G1.
LOCATION.--Lat 47°26'48", long 119°52'50", Hydrologic Unit 17020012.
Owner: Palisades Irrigation District.
AQUIFER.--Glacial gravel of Holocene Age.
WELL CHARACTERISTICS.--Dug irrigation, water-table well, diameter 40 to 72 in (1,000 to 1,800 mm) depth 154 ft (46.9 m) lined with concrete to 152 ft (46.3 m).
DATUM.--Land-surface datum about 1,030 ft (314 m) above mean sea level.
PERIOD OF RECORD.--April 1943, April 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 132.15 ft (40.279 m) below land-surface datum, Apr. 29, 1959; lowest measured, 146.79 ft (44.742 m) below land-surface datum, Oct. 12, 1970.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 6, 1975	144.52	Mar. 29, 1976	143.75				

474855119303901. Local number, 27/26-25D1.
LOCATION.--Lat 47°48'55", long 119°30'39", Hydrologic Unit 17020012, near Mansfield.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, water-table well, diameter 10 in (250 mm), total depth 760 ft (231.6 m), completed depth interval from 38 to 53 ft (11.6 to 16.2 m).
DATUM.--Land-surface datum is 2,215 ft (675.1 m) above mean sea level.
REMARKS.--Water level measured in casing.
PERIOD OF RECORD.--April 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.36 ft (4.682 m) below land-surface datum, May 24, 1974; lowest measured, 19.88 ft (6.059 m) below land-surface datum, Aug. 24, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 25, 1975	18.05	Feb. 9, 1976	18.44	May 10, 1976	18.62	Aug. 24, 1976	19.88
Jan. 12, 1976	18.29	Mar. 16	18.38	July 1	19.76		

474855119303902. Local number, 27/26-25D2.
LOCATION.--Lat 47°48'55", long 119°30'39", Hydrologic Unit 17020012, near Mansfield.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 760 ft (231.6 m), completed depth interval from 70 to 152 ft (21.3 to 46.3 m), uncased.
DATUM.--Land-surface datum is 2,215 ft (675.1 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--April 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 91.83 ft (27.990 m) below land-surface datum, May 24, 1974; lowest measured, 102.48 ft (31.236 m) below land surface datum, Jan. 20, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 25, 1975	99.35	Feb. 9, 1976	99.50	May 10, 1976	99.80	Aug. 24, 1976	100.03
Jan. 12, 1976	99.00	Mar. 16	99.90	July 1	100.28		

474855119303904. Local number 27/26-25D4.
LOCATION.--Lat 47°48'55", long 119°30'39", Hydrologic Unit 17020012, near Mansfield.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 760 ft (231.6 m), completed depth interval from 490 to 610 ft (149.4 to 185.9 m), uncased, and perforated from 465 to 485 ft (141.7 to 147.8 m).
DATUM.--Land-surface datum is 2,215 ft (675.1 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--April 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 277.40 ft (84.552 m) below land-surface datum, Apr. 20, 1974; lowest measured, 324.95 ft (99.045 m) below land-surface datum, July 23, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 25, 1975	323.75	Feb. 9, 1976	323.70	May 10, 1976	323.10	Aug. 24, 1976	323.18
Jan. 12, 1976	323.65	Mar. 16	323.50	July 1	311.10		

DOUGLAS COUNTY--Continued

474855119303905. Local number, 27/26-25D5.
LOCATION.--Lat 47°48'55", long 119°30'39", Hydrologic Unit 17020012, near Manfield.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), total depth 760 ft (231.6 m), completed depth interval from 630 to 687 ft (192.0 to 209.4 m) uncased, and screened from 750 to 760 ft (228.6 to 231.6 m).
DATUM.--Land-surface datum is 2,215 ft (675.1 m) above mean sea level.
REMARKS.--Water level measured in piezometer.
PERIOD OF RECORD.--April 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 324.00 ft (98.755 m) below land-surface datum, May 10, 1976; lowest measured, 327.90 ft (99.944 m) below land-surface datum, Apr. 20, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 25, 1975	325.35	Feb. 9, 1976	324.30	May 10, 1976	324.00	Aug. 24, 1976	324.19
Jan. 12, 1976	324.30	Mar. 16	324.70	July 1	324.45		

FRANKLIN COUNTY

461705118570001. Local number, 9/31-4N1.
LOCATION.--Lat 46°17'05", long 118°57'00", Hydrologic Unit 17060110, at Pasco.
Owner: James W. Rogers
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 343 ft (104.5 m).
DATUM.--Land-surface datum about 658 ft (200.6 m) above mean sea level.
PERIOD OF RECORD.--April 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 266.60 ft (81.260 m) below land-surface datum, Mar. 19, 1975; lowest measured, 292.01 ft (89.005 m) below land-surface datum, Apr. 18, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 1, 1975	267.3	Jan. 28, 1976	266.8	June 1, 1976	267.6	Sept. 27, 1976	284.7
Nov. 26	268.9	Mar. 23	271.2	Aug. 5	269.9		

462030119062001. Local number, 10/30-19C1.
LOCATION.--46°20'30", long 119°06'20", Hydrologic Unit 17020016.
Owner: Andrus and Roberts Produce Company.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled industrial water-table well, diameter 6 in (150 mm), depth 395 ft (120.4 m).
DATUM.--Land-surface datum about 500 ft (152 m) above mean sea level.
PERIOD OF RECORD.--April 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 97.85 ft (29.825 m) below land-surface datum, June 1, 1976; lowest measured, 134.94 ft (41.130 m) below land-surface datum, Nov. 7, 1960.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 2, 1975	101.9	Jan. 27, 1976	98.72	June 1, 1976	97.85	Sept. 30, 1976	100.1
Nov. 26	98.80	Mar. 24	98.1				

462830119043301. Local number, 11/30-5B1.
LOCATION.--Lat 46°28'30", long 119°04'33", Hydrologic Unit 17020016.
Owner: Fred Holmes Community.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled public-supply water-table well, diameter 8 in (200 mm), depth 110 ft (33.5 m), cased to 29 ft (8.8 m).
DATUM.--Land-surface datum about 741 ft (225.9 m) above mean sea level.
PERIOD OF RECORD.--January 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.2 ft (9.510 m) below land-surface datum, Sept. 29, 1972; lowest measured, 61.05 ft (18.608 m) below land-surface datum, Apr. 15, 1958.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 2, 1975	43.1A	Jan. 28, 1976	44.1	June 2, 1976	44.8A	Sept. 30, 1976	42.4
Nov. 26	42.7A	Mar. 25	36.1	Aug. 4	36.0		

A Well being pumped.

463231119001601. Local number, 12/30-12E.
LOCATION.--Lat 46°32/31", long 119°00'16", Hydrologic Unit 17020016, at Eltopia.
Owner: Lea Hailey.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled stock water-table well, diameter 6 in (150 mm), depth 121 ft (36.9 m), cased to 120 ft (36.6 m).
DATUM.--Land-surface datum about 676 ft (206.0 m) above mean sea level.
PERIOD OF RECORD.--October 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 92.3 ft (28.13 m) below land-surface datum, Oct. 2, 1970; lowest measured, 108.69 ft (33.129 m) below land-surface datum, Apr. 16, 1959.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 25, 1975	106.6A	Mar. 22, 1976	100.1	Aug. 3, 1976	98.5	Sept. 30, 1976	99.5
Jan. 28, 1976	104.6	June 2	98.6				

463339119125601. Local number 12/29-5D1.
LOCATION.--Lat 46°33'39", long 119°12'56", Hydrologic Unit 17020016.
Owner: James Reynolds.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 181 ft (55.2 m), cased to 157 ft (47.9 m).
DATUM.--Land-surface datum about 610 ft (185.9 m) above mean sea level.
PERIOD OF RECORD.--January 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 113.00 ft (34.442 m) below land-surface datum, Dec. 15, 1959; lowest measured, 147.1 ft (44.84 m) below land-surface datum, Sept. 29, 1976.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 2, 1975	116.5	Jan. 26, 1976	116.4	June 1, 1976	122.0	Sept. 29, 1976	147.1
Nov. 26	117.4	Mar. 22	115.6	Aug. 4	124.8		

463440118473001. Local number, 13/32-27N1.
LOCATION.--Lat 46°34'40", long 118°47'30", Hydrologic Unit 17020016, at Connell.
Owner: Dorsey Elgin.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (150 mm), depth 323 ft (98.5 m).
DATUM.--Land-surface datum about 1,155 ft (352.0 m) above mean sea level.
PERIOD OF RECORD.--October 1950-52, August 1956, June 1958, April 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 191.3 ft (58.31 m) below land-surface datum, July 30, 1975 and June 2, 1976; lowest measured 281.47 ft (85.792 m) below land-surface datum, Oct. 4, 1950.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 2, 1975	193.16	Jan. 27, 1976	191.7	June 2, 1976	191.3	Sept. 29, 1976	195.8
Nov. 26	192.8	Mar. 24	191.6	Aug. 5	192.1		

463641119001001. Local number, 13/30-13M1.
LOCATION.--Lat 46°36'41", long 119°00'10", Hydrologic Unit 17020016, at Mesa.
Owner: P. H. Taylor.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic and stock water-table well, diameter 6 in (150 mm), depth 186 ft (56.7 m), cased to 11 ft (3.4 m).
DATUM.--Land-surface datum about 956 ft (291.4 m) above mean sea level.
PERIOD OF RECORD.--March 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 107.8 ft (32.86 m) below land-surface datum, Sept. 26, 1974; lowest measured, 141.72 ft (43.196 m) below land-surface datum, May 25, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 25, 1975	118.0	Mar. 22, 1976	133.6	Aug. 3, 1976	124.5	Sept. 29, 1976	119.0
Jan. 28, 1976	128.9	June 2	135.3				

463950118564001. Local number, 14/31-29R1.
LOCATION.--Lat 46°39'50", long 118°56'40", Hydrologic Unit 17020016.
Owner: Keith Herrman.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 315 ft (96.0 m), cased to 104 ft (31.7 m).
DATUM.--Land-surface datum about 1,118 ft (340.8 m) above mean sea level.
PERIOD OF RECORD.--April 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 176.7 ft (53.86 m) below land-surface datum, Oct. 2, 1975; lowest measured, 232.80 ft (70.957 m) below land-surface datum, Apr. 26, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 2, 1975	176.7	Jan. 27, 1976	179.0	June 2, 1976	181.8	Sept. 29, 1976	177.6
Nov. 25	178.2	Mar. 22	181.4	Aug. 4	180.1		

A Well being pumped.

FRANKLIN COUNTY--Continued

464028119101601. Local number, 14/29-27E1.
LOCATION.--Lat 46°40'28", long 119°10'16", Hydrologic Unit 17020016.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled public-supply water-table well, diameter 8 in (200 mm), depth 498 ft (151.8 m), cased to 435 ft (132.6 m).
DATUM.--Land-surface datum about 947 ft (288.6 m) above mean sea level.
PERIOD OF RECORD.--December 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 87.4 ft (26.64 m) below land-surface datum, Mar. 22, 1976; lowest measured, 235.79 ft (71.869 m) below land surface-datum, Mar. 24, 1960.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 26, 1975	92.2	Mar. 22, 1976	87.4	Aug. 3, 1976	90.6	Sept. 29, 1976	116.0
Jan. 26, 1976	87.8	June 1	143.0A				

GRANT COUNTY

464022119420801. Local number, 14/25-28E1.
LOCATION.--Lat 46°40'22", long 119°42'08", Hydrologic Unit 17020016.
Owner: U.S. Government, ERDA.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (500 mm), depth 648 ft (197.5 m), cased to 648 ft (197.5 m), perforated 492 to 503 ft (150.0 to 153.3 m).
DATUM.--Land-surface datum about 860 ft (262 m) above mean sea level.
PERIOD OF RECORD.--May 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 456.70 ft (139.202 m) below land-surface datum, Mar. 17, 1975 and Mar. 22, 1976; lowest measured, 473.10 ft (144.201 m) below land-surface datum, May 10, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Jan. 26, 1976	457.0	Mar. 22, 1976	456.7				

464518119335001. Local number 15/26-28Q1.
LOCATION.--Lat 46°45'18", long 119°33'50", Hydrologic Unit 17020016.
Owner: U.S. Government, ERDA.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 to 8 in (400 to 200 mm), depth 892 ft (271.9 m), perforated 860 to 870 ft (262.1 to 265.2 m).
DATUM.--Land-surface datum about 770 ft 235 m) above mean sea level.
PERIOD OF RECORD.--October 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 299.75 ft (91.364 m) below land-surface datum, Nov. 29, 1972; lowest measured 323.4 ft (98.57 m) below land-surdace datum, Nov. 13, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
June 1, 1976	303.2	Aug. 3, 1976	302.8	Sept. 29, 1976	331.6		

465851119151501. Local number, 17/28-11F.
LOCATION.--Lat 46°58'51", long 119°16'16", Hydrologic Unit 17020015.
Owner: U.S. Government, U.S. Bureau of Reclamation.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused artesian test well, diameter 2 in (50 mm), depth 168 ft (51.2 m), cased to 8 ft (2.4 m).
DATUM.--Land-surface datum is 1,051.6 ft (320.53 m) above mean sea level.
PERIOD OF RECORD.--March 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 90.88 ft (27.700 m) below land-surface datum, July 22, 1956; lowest measured, 141.01 ft (42.980 m) belowland-surface datum, Jan. 31, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	DAte	Water Level	Date	Water Level
Oct. 21, 1975	104.04	Mar. 10, 1976	100.69				

A Well being pumped.

465903119070901. Local number, 17/29-12C1.
LOCATION.--Lat 46°59'03", long 119°07'09", Hydrologic Unit 17020015.
Owner: Rogers Hayes.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 315 ft (96.0 m).
DATUM.--Land-surface datum about 1,212 ft (369.4 in) above mean sea level.
PERIOD OF RECORD.--Septe,ber 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.35 ft (10.165 m) below land-surface datum, Oct. 17, 1967; lowest measured, 220.13 ft (67.096 m) below land-surface datum, Aug. 31, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	36.62	Feb. 10, 1976	45.44B	May 26, 1976	48.31	Sept. 8, 1976	40.67
Dec. 17	41.46	Apr. 1	48.83	July 20	43.85		

470352119433201. Local number, 18/25-8M1.
LOCATION.--Lat 47°03'52", long 119°43'32", Hydrologic Unit 17020015.
Owner: Metropolitan Life.
AQUIFER.--Glacial sand of Pleistocene Age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 36 in (900 mm), depth 112 ft (34.1 m), lined with concrete to 112 ft (34.1 m).
DATUM.--Land-surface datum about 1,179 ft (359.4 m) above mean sea level.
PERIOD OF RECORD.--November 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.22 ft (8.906 m) below land-surface datum, Feb. 19, 1969; lowest measured, 98.76 ft 30.102 m) below land-surface datum, Apr. 27, 1953.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	32.36	Feb. 11, 1976	30.72	May 26, 1976	32.84	Sept. 8, 1976	37.20C
Dec. 17	31.04	Apr. 1	30.68	July 20	39.04		

470445119160301. Local number, 18/28-2L1.
LOCATION.--Lat 47°04'45", long 119°16'03", Hydrologic Unit 17020015.
Owner: Dune Lake Company.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (150 mm), depth 184 ft (56.1 m).
DATUM.--Land-surface datum about 1,128 ft (343.8 m) above mean sea level.
PERIOD OF RECORD.--October 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.45 ft (0.137 m) below land-surface datum, Sept. 4, 1970; lowest measured, 74.25 ft (22.631 m) below land-surface datum, May 14, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	2.79	Mar. 10, 1976	4.66				

470608119331502. Local number 19/26-34D1.
LOCATION.--Lat 47°06'08", long 119°33'15", Hydrologic Unit 17020015.
Owner: Washington State Highways.
AQUIFER.--Glacial sand of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 96 ft (29.3 m), cased to 65 ft (19.8 m).
DATUM.--Land-surface datum about 1,168 ft (356.0 m) above mean sea level.
PERIOD OF RECORD.--March 1939-July 1963, November 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.64 ft (8.425 m) below land-surface datum, Feb. 11, 1976; lowest measured, 99.59 ft (30.355 m) below land-surface datum, July 17, 1958.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	28.06	Feb. 11, 1976	27.64	May 26, 1976	28.05	Sept. 8, 1976	28.33
Dec. 17	27.93	Apr. 1	27.77	July 20	28.38		

470621119144401. Local number, 19/28-25L1.
LOCATION.--Lat 47°06'21", long 119°14'44", Hydrologic Unit 17020015, at Moses Lake.
Owner: Paul Landis.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARCTERISTICS.--Drilled unused water-table well, diameter 12 in (300 mm), depth 492 ft (150.0 m).
DATUM.--Land-surface datum about 1,192 ft (363.3 m) above mean sea level.
PERIOD OF RECORD.--October 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.3 ft (12.28 m) below land-surface datum, Sept. 5, 1974; lowest measured, 180.30 ft (54.955 m) below land-surface datum, Sept. 19, 1950.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	42.82	Feb. 10, 1976	44.87	May 25, 1976	45.57	Sept. 8, 1976	43.01
Dec. 16	43.45	Apr. 1	45.90	July 20	44.20		

C Nearby well being pumped.

470631119420501. Local number, 19/25-28M1.
LOCATION.--Lat 47°06'31", long 119°42'05", Hydrologic Unit 17020015.
Owner: Edwin A. Wyatt.
AQUIFER.--Glacial sand of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (200 mm), depth 124 ft (37.8 m).
DATUM.--Land-surface datum about 1,194 ft (363.9 m) above mean sea level.
PERIOD OF RECORD.--November 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.00 ft (11.278 m) below land-surface datum, Apr. 19, 1972; lowest measured, 114.47 ft (34.890 m) below land-surface datum, Apr. 7, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	44.42	Feb. 11, 1976	40.74	May 26, 1976	44.63	Sept. 8, 1976	44.63
Dec. 17	42.77	Apr. 1	41.49	July 20	46.64		

470652119230301. Local number, 19/27-26A1.
LOCATION.--Lat 47°06'52", long 119°23'03", Hydrologic Unit 17020015.
Owner: C. M. Grant.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug domestic and irrigation water-table well, diameter 48 to 6 in (1,200 to 150 mm), depth 52 ft (15.8 m).
DATUM.--Land-surface datum about 1,073 ft (327.1 m) above mean sea level.
PERIOD OF RECORD.--November 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.68 ft (7.522 m) below land-surface datum, Mar. 14, 1974; lowest measured, 41.86 ft (12.759 m) below land-surface datum, July 22, 1953.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 20, 1975	30.99A	Mar. 10, 1976	26.84A				

470753119192402. Local number, 19/28-20A1.
LOCATION.--47°07'53", long 119°19'24", Hydrologic Unit 17020015.
Owner: M. C. Wilson.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug irrigation water-table well, diameter 36 in (900 mm), depth 39 ft (11.9 m), lined with concrete to 38 ft (11.6 m).
DATUM.--Land-surface datum about 1,080 ft (329 m) above mean sea level.
PERIOD OF RECORD.--November 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.21 ft (9.818 m) below land-surface datum, Oct. 3, 1973; lowest measured, 46.95 ft (14.310 m) below land-surface datum, Mar. 1, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 22, 1975	35.44	Feb. 10, 1976	37.06	May 25, 1976	34.90	Sept. 9, 1976	34.59
Dec. 16	39.28	Apr. 1	35.61	July 21	34.60		

470759119344501. Local number, 19/26-20A1.
LOCATION.--Lat 47°07'59", long 119°34'45", Hydrologic Unit 17020015.
Owner: Joe Tainaka.
AQUIFER.--Glacial sand of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 150 ft (45.7 m), cased to 100 ft (30.5 m).
DATUM.--Land-surface datum about 1,224 ft (373.1 m) above mean sea level.
PERIOD OF RECORD.--March 1939-August 1940, April 1942, September 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.33 ft (18.998 m) below land-surface datum, Apr. 19, 1972; lowest measured, 151.45 ft (46.162 m) below land-surface datum, Apr. 11, 1952.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	65.45	Feb. 11, 1976	63.49	May 25, 1976	64.13	Sept. 8, 1976	66.53
Dec. 17	64.14	Apr. 1	63.65	July 20	67.92		

470805119263801. Local number, 19/27-16N1.
LOCATION.--Lat 47°08'05", long 119°26'38", Hydrologic Unit 17020015.
Owner: Wes Avara.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug irrigation water-table well, diameter 84 in (2,100 mm), depth 74 ft (22.6 m), lined with concrete to 65 ft (19.8 m).
DATUM.--Land-surface datum about 1,094 ft (333.5 m) above mean sea level.
PERIOD OF RECORD.--December 1942 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 47.37 ft (14.438 m) below land-surface datum, Mar. 14, 1974; lowest measured, 81.77 ft (24.923 m) below land-surface datum, Oct. 28, 1947.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	49.10	Mar. 10, 1976	48.62				

A Well being pumped.

470811119074301. Local number, 19/29-14J1.
LOCATION.--Lat 47°08'11", long 119°07'43", Hydrologic Unit 17020015.
Owner: Jim Abram.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 12 in (300 mm), depth 368 ft (112.2 m).
DATUM.--Land-surface datum about 1,357 ft (413.6 m) above mean sea level.
PERIOD OF RECORD.--December 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 132.21 ft (40.298 m) below land-surface datum, Dec. 30, 1964; lowest measured, 234.03 ft (71.332 m) below land-surface datum, Oct. 27, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 22, 1975	150.34	Feb. 10, 1976	141.40	May 27, 1976	156.86	Sept. 9, 1976	149.99
Dec. 16	143.77	Apr. 2	142.80	July 21	150.79		

470913119192401. Local number, 19/28-8H2.
LOCATION.--Lat 47°09'13", long 119°19'24", Hydrologic Unit 17020015.
Owner: Mr. Baker.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug irrigation and domestic water-table well, diameter 10 in (250 mm), depth 48 ft (14.6 m), cased to 48 ft (14.6 m).
DATUM.--Land-surface datum about 1,090 ft (332.2 m) above mean sea level.
PERIOD OF RECORD.--November 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.97 ft (12.183 m) below land-surface datum, June 12, 1952; lowest measured, 48.35 ft (14.737 m) below land-surface datum, Dec. 13, 1960.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 22, 1975	43.04	Feb. 10, 1976	44.36B	May 25, 1976	43.75	Sept. 9, 1976	43.37A
Dec. 16	44.74	Apr. 1	44.07	July 21	43.48		

470935119174201. Local number, 19/28-10D1.
LOCATION.--Lat 47°09'35", long 119°17'42", Hydrologic Unit 17020015.
Owner: Harold Mathenia.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug and drilled domestic water-table well, diameter 40 to 6 in (1,000 to 150 mm), depth 102 ft (31.1 m).
DATUM.--Land-surface datum about 1,114 ft (339.5 m) above mean sea level.
PERIOD OF RECORD.--November 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 48.23 ft (14.701 m) below land-surface datum, Sept. 16, 1969; lowest measured, 62.08 ft (18.922 m) below land-surface datum, Aug. 30, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 22, 1975	49.05	Mar. 11, 1976	52.40				

471020119210701. Local number, 19/28-6C1.
LOCATION.--Lat 47°10'20", long 119°21'07", Hydrologic Unit 17020015.
Owner: Troy Farms Inc.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug irrigation water-table well, diameter 48 in (1,200 mm), depth 37 ft (11.3 m), lined with concrete to 37 ft (11.3 m).
DATUM.--Land-surface datum about 1,078 ft (328.6 m) above mean sea level.
PERIOD OF RECORD.--March 1939-April 1942, August 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.10 ft (8.870 m) below land-surface datum, June 24, 1971; lowest measured, 42.42 ft (12.930 m) below land-surface datum, June 19, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 21, 1975	33.91	Feb. 10, 1976	34.98B	May 25, 1976	33.84A	Sept. 8, 1976	33.17
Dec. 16	35.23	Apr. 1	33.72	July 21	33.70A		

471955119324701. Local number, 21/26-10L2.
LOCATION.--Lat 47°19'55", long 119°32'47", Hydrologic Unit 17020015.
Owner: D. L. Nelson.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diamter 8 in (200 mm), depth 122 ft (37.2 m), cased to 100 ft (30.5 m).
DATUM.--Land-surface datum about 1,260 ft (384 m) above mean sea level.
PERIOD OF RECORD.--September 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.87 ft (6.056 m) below land-surface datum, Aug. 28, 1975; lowest measured, 68.27 ft (20.809 m) below land-surface datum, Dec. 7, 1959.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 23, 1975	20.99	Feb. 11, 1976	23.94	May 24, 1976	25.50	Sept. 9, 1976	20.46
Dec. 18	22.85	Mar. 29	24.16	July 19	24.00		

A Well being pumped. B Well pumped recently.

454325120554301. Local number, 3/15-28A1.
LOCATION.--Lat 45°43'25", long 120°55'43", Hydrologic Unit 17070106.
Owner: Frank Garner.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (150 mm), depth 85 ft (25.9 m).
DATUM.--Land-surface datum about 1,695 ft (516.6 m) above mean sea level.
PERIOD OF RECORD.--August 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.86 ft (2.091 m) below land-surface datum, Apr. 8, 1965; lowest measured, 17.18 ft (5.236 m) below land-surface datum, Oct. 15, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 1976	9.8	Sept. 22, 1976	14.55				

454715120434901. Local number, 4/17-31L1.
LOCATION.--Lat 45°47'15", long 120°43'49", Hydrologic Unit 17070106.
Owner: T. V. Wilkins.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (400 mm), depth 139 ft (42.4 m).
DATUM.--Land-surface datum about 1,883 ft (573.9 m) above mean sea level.
PERIOD OF RECORD.--August 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.99 ft (0.302 m) below land-surface datum, Feb. 16, 1966; lowest measured, 8.01 ft (2.441 m) below land-surface datum, Sept. 9, 1966.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 1976	2.20	Sept. 22, 1976	4.57				

455008120561301. Local number, 4/15-16F1.
LOCATION.--Lat 45°50'08", long 120°56'13", Hydrologic Unit 17070106, near Blockhouse.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, water-table well, diameter 12 in (300 mm), depth 595 ft (181.4 m), 12 in (300 mm) diameter casing to 331 ft (100.9 m), perforated 40 to 331 ft (12.2 to 100.9 m).
DATUM.--Land-surface datum is 1,590 ft (485 m) above mean sea level.
REMARKS.--Monitored depth interval from 40 to 210 ft (12.2 to 64.0 m), water level measured in piezometer.
PERIOD OF RECORD.--March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.1 ft (3.38 m) below land-surface datum, Apr. 12, 1976; lowest measured, 19.00 ft (5.791 m) below land-surface datum, Mar. 16, 1973.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 1976	11.1	Sept. 22, 1976	18.0				

455008120561302. Local number, 4/15-16F2.
LOCATION.--Lat 45°50'08", long 120°56'13", Hydrologic Unit 170701016, near Blockhouse.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 12 in (300 mm), depth 595 ft (181.4 m), 12 in (300 mm) diameter casing to 331 ft (100.9 m), perforated 40 to 331 ft (12.2 to 100.9 m).
DATUM.--Land-surface datum is 1,590 ft (485 m) above mean sea level.
REMARKS.--Monitored depth interval from 215 to 330 ft (65.5 to 100.6 m), water level measured in piezometer.
PERIOD OF RECORD.--March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 11.0 ft (3.35 m) below land-surface datum, Apr. 12, 1976; lowest measured, 18.50 ft (5.639 m) below land-surface datum, Mar. 16, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 1976	11.0	Sept. 22, 1976	17.8				

455008120561303. Local number, 4/15-16F3.
LOCATION.--Lat 45°50'08", long 120°56'13", Hydrologic Unit 17070106, near Blockhouse.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 12 in (300 mm), depth 595 ft (181.4 m), 12 in (300 mm) diameter casing to 331 ft (100.9 m), perforated 40 to 331 ft (12.2 to 100.9 m).
DATUM.--Land-surface datum is 1,590 ft (485 m) above mean sea level.
REMARKS.--Monitored depth interval from 335 to 440 ft (102.1 to 134.1 m), water level measured in piezometer.
PERIOD OF RECORD.--March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.6 ft (3.54 m) below land-surface datum, Apr. 12, 1976; lowest measured, 19.00 ft (5.791 m) below land-surface datum, Mar. 16, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 1976	11.6	Sept. 22, 1976	18.4				

KLICKITAT COUNTY--Continued

455008120561304. Local number, 4/15-16F4.
LOCATION.--Lat 45°50'08", long 120°56'13", Hydrologic Unit 17070106, near Blockhouse.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 12 in (300 mm), depth 595 ft (181.4 m), 12 in (300 mm) diameter casing to 331 ft (100.9 m), perforated 40 to 331 ft (12.2 to 100.9 m).
DATUM.--Land-surface datum is 1,590 ft (485 m) above mean sea level.
REMARKS.--Monitored depth interval from 500 to 580 ft (152.4 to 176.8 m), water level measured in piezometer.
PERIOD OF RECORD.--March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 200.8 ft (61.20 m) below land-surface datum, Apr. 12, 1976; lowest measured, 223.60 ft (68.153 m) below land-surface datum, Apr. 30, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 1976	200.8	Sept. 22, 1976	202.0				

LINCOLN COUNTY

471937118544402. Local number, 21/31-10M2.
LOCATION.--47°19'37", long 118°54'44", Hydrologic Unit 17020015, near Odessa.
Owner: Mrs. Robert Schell.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled oil-test well, diameter 10 in (250 mm), depth 4,682 ft (1,427.1 m), cased to 98 ft (29.9 m).
DATUM.--Land-surface datum is 1,610 ft (491 m) above mean sea level.
REMARKS.--Monitored depth interval from 98 to 735 ft (29.9 to 224.0 m), water level measured in piezometer.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 230.25 ft (70.180 m) below land-surface datum, Jan. 8, 1973; lowest measured, 274.50 ft (83.668 m) below land-surface datum, Sept. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 23, 1975	270.82	Feb. 12, 1976	262.02	May 24,1976	268.94	Sept. 10, 1976	274.50
Dec. 19	266.50	Mar. 29	261.48	July 19	273.21		

471937118544403. Local number, 21/31-10M3.
LOCATION.--Lat 47°19'37", long 118°54'44", Hydrologic Unit 17020015, near Odessa.
Owner: Mrs. Robert Schell.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled oil-test well, diameter 10 in (250 mm), depth 4,682 ft (1,427.1 m), cased to 98 ft (29.9 m).
DATUM.--Land-surface datum is 1,610 ft (491 m) above mean sea level.
REMARKS.--Monitored depth interval from 742 to 1,480 ft (226.2 to 451.1 m), water level measured in piezometer.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 231.32 ft (70.506 m) below land-surface datum, Jan. 8, 1973; lowest measured, 300.43 ft (91.571 m) below land-surface datum, Mar. 29, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 23, 1975	298.03	Feb. 12, 1976	296.19	May 24, 1976	296.05	Sept. 10, 1976	295.40
Dec. 19	296.90	Mar. 29	300.43	July 19	297.40		

471937118544404. Local number, 21/31-10M4.
LOCATION.--Lat 47°19'37", long 118°54'44", Hydrologic Unit 17020015, near Odessa.
Owner: Mrs. Robert Schell.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS. Drilled oil-test well, diameter 10 in (250 mm), depth 4,682 ft (1,427.1 m), cased to 98 ft (29.9 m).
DATUM.--Land-surface datum is 1,610 ft (491 m) above mean sea level.
REMARKS.--Monitored depth interval from 1,488 to 2,300 ft (453.5 to 701.0 m), water level measured in piezometer.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 224.56 ft (68.446 m) below land-surface datum, May 24, 1976; lowest measured, 231.93 ft (70.692 m) below land-surface datum, Dec. 4, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 23, 1975	227.24	Feb. 12, 1976	226.14	May 24, 1976	224.56	Sept. 10, 1976	229.40
Dec. 19	227.17	Mar. 29	225.95	July 19	227.84		

473433118560301. Local number, 24/31-16E1.
LOCATION.--Lat 47°34'33", long 118°56'03", Hydrologic Unit 17020013, near Almira.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, water table well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 60 ft (18.3 m).
DATUM.--Land surface datum is 1,845 ft (562.4 m) above mean sea level.
REMARKS.--Monitored depth interval from 60 to 316 ft (18.3 to 96.3 m), water level measured in 10 in (250 mm) diameter casing.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 175.20 ft (53.401 m) below land-surface datum, Sept. 10, 1975; lowest measured, 185.70 ft (56.601 m) below land-surface datum, Feb. 20, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	175.4	Mar. 4, 1976	175.5	July 1, 1976	175.5	Aug. 24, 1976	175.6
Jan. 8, 1976	175.3	May 7	175.4				

473433118560302. Local number, 24/31-16E2.
LOCATION.--Lat 47°34'33", long 118°56'03", Hydrologic Unit 17020013, near Almira.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 60 ft (18.3 m).
DATUM.--Land-surface datum is 1,845 ft (562.4 m) above mean sea level.
REMARKS.--Monitored depth interval from 424 to 456 ft (129.2 to 139.0 m), water level measured in piezometer.
PERIOD OF RECORD.--May 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 354.78 ft (108.137 m) below land-surface datum, May 18, 1973; lowest measured, 369.49 ft (112.621 m) below land-surface datum, Feb. 4, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	361.67	Mar. 4, 1976	360.86	July 1, 1976	362.37	Aug. 24, 1976	365.36
Jan. 8, 1976	365.25	May 7	360.67				

473433118560303. Local number, 24/31-16E3.
LOCATION.--Lat 47°34'33", long 118°56'03", Hydrologic Unit 17020013, near Almira.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 60 ft (18.3 m).
DATUM.--Land-surface datum is 1,845 ft (562.4 m) above mean sea level.
REMARKS.--Monitored depth interval from 494 to 556 ft (150.6 to 169.5 m), water level measured in piezometer.
PERIOD OF RECORD.--May 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level meaured, 355.17 ft (108.256 m) below land-surface datum, May 18, 1973; lowest measured, 369.49 ft (112.621 m) below land-surface datum, Feb. 4, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	361.64	Mar. 4, 1976	360.77	July 1, 1976	362.37	Aug. 24, 1976	365.37
Jan. 8, 1976	365.15	May 7	360.59				

473433118560304. Local number, 24/31-16E4.
LOCATION.--Lat 47°34'33", long 118°56'03", Hydrologic Unit 17020013, near Almira.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 60 ft (18.3 m).
DATUM.--Land-surface datum is 1,845 ft (562.4 m) above mean sea level.
REMARKS.--Monitored depth interval 650 to 698 ft (198.1 to 212.8 m), water level measured in piezometer.
PERIOD OF RECORD.--May 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 354.59 ft (108.079 m) below land-surface datum, May 18, 1973; lowest measured, 369.42 ft (112.599 m) below land-surface datum, Feb. 4, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	361.32	Mar. 4, 1976	360.60	July 1, 1976	362.62	Aug. 24, 1976	365.12
Jan. 8, 1976	365.05	May 7	360.22				

473442118162201. Local number, 24/36-16A1.
LOCATION.--Lat 47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, water-table well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).
DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.
REMARKS.--Monitored depth interval from 75 to 116 ft (22.9 to 35.4 m), water level measured in 10 in (250 mm) casing.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.52 ft (8.693 m) below land-surface datum, May 1, 1974; lowest measured, 46.10 ft (14.051 m) below land-surface datum, Nov. 6, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	32.9	Mar. 2, 1976	32.1	June 29, 1976	33.4	Aug. 20, 1976	34.9
Jan. 8, 1976	33.3	May 7	32.6				

473442118162202. Local number, 24/36-16A2.
LOCATION.--47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).
DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.
REMARKS.--Monitored depth interval from 123 to 160 ft (37.5 to 48.8 m), water level measured in piezometer.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.38 ft (8.650 m) below land-surface datum, May 1, 1974; lowest measured, 46.22 ft (14.088 m) below land-surface datum, Nov. 6, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	32.95	Mar. 2, 1976	32.08	June 29, 1976	33.54	Aug. 20, 1976	34.61
Jan. 8, 1976	33.3	May 7	32.49				

473442118162203. Local number, 24/36-16A3.
LOCATION.--47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).
DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.
REMARKS.--Monitored depth interval from 208 to 224 ft (63.4 to 68.3 m), water level measured in piezometer.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.24 ft (8.608 m) below land-surface datum, May 1, 1974; lowest measured, 46.25 ft (14.097 m) below land-surface datum, Nov. 6, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	32.90	Mar. 2, 1976	32.04	June 29, 1976	33.35	Aug. 20, 1976	34.86
Jan. 8, 1976	33.3	May 7	32.44				

473442118162204. Local number, 24/36-16A4.
LOCATION.--Lat 47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).
DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.
REMARKS.--Monitored depth interval from 242 to 261 ft (73.8 to 79.6 m), water level measured in piezometer.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level meaured, 27.47 ft (8.373 m) below land-surface datum, May 1, 1974; lowest measured, 46.45 ft (14.158 m) below land-surface datum, Nov. 6, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	32.66	Mar. 2, 1976	31.92	June 29, 1976	33.36	Aug. 20, 1976	34.73
Jan. 8, 1976	33.2	May 7	32.30				

473442118162205. Local number, 24/36-16A5.

LOCATION.--Lat 47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).

DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.

REMARKS.--Monitored depth interval from 315 to 365 ft (96.0 to 111.3 m), water level measured in piezometer.

PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.90 ft (8.504 m) below land-surface datum, May 1, 1974; lowest measured, 50.53 ft (15.402 m) below land-surface datum, Sept. 6, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	33.73	Mar. 2, 1976	33.36	June 29, 1976	36.95	Aug. 20, 1976	37.65
Jan. 8, 1976	33.9	May 7	33.76				

473442118162206. Local number, 24/36-16A6.

LOCATION.--Lat 47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).

DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.

REMARKS.--Monitored depth interval from 451 to 491 ft (137.5 to 149.7 m), water level measured in piezometer.

PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.93 ft (10.647 m) below land-surface datum, Mar. 2, 1976; lowest measured, 66.34 ft (20.220 m) below land-surface datum, Sept. 30, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	35.96	Mar. 2, 1976	34.93	June 29, 1976	36.44	Aug. 20, 1976	39.66
Jan. 8, 1976	35.1	May 7	35.18				

473442118162207. Local number, 24/36-16A7.

LOCATION.--Lat 47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).

DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.

REMARKS.--Monitored depth interval from 590 to 635 ft (179.8 to 193.5 m), water level measured in piezometer.

PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 162.47 ft (49.521 m) below land-surface datum, Mar. 22, 1972; lowest measured, 207.60 ft (63.276 m) below land-surface datum, Sept. 4, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	190.37	Mar. 2, 1976	175.67	June 29, 1976	191.1	Aug. 20, 1976	194.40
Jan. 8, 1976	181.2	May 7	172.82				

473442118162208. Local number, 24/36-16A8.

LOCATION.--Lat 47°34'42", long 118°16'22", Hydrologic Unit 17020013, near Davenport.
Owner: State of Washington, Department of Ecology.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 10 in (250 mm), depth 750 ft (228.6 m), cased to 75 ft (22.9 m).

DATUM.--Land-surface datum is 2,372 ft (723.0 m) above mean sea level.

REMARKS.--Monitored depth interval from 728 to 750 ft (221.9 to 228.6 m), water level measured in piezometer.

PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 162.82 ft (49.628 m) below land-surface datum, Mar. 22, 1972; lowest measured, 207.70 ft (63.307 m) below land-surface datum, Sept. 4, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 31, 1975	190.50	Mar. 2, 1976	174.07	June 29, 1976	191.2	Aug. 20, 1976	194.65
Jan. 8, 1976	181.23	May 7	172.94				

OKANOGAN COUNTY

484033119310302. Local number, 37/26-26J1.
LOCATION.--Lat 48°40'33", long 119°31'03", Hydrologic Unit 17020006.
Owner: Plateau Orchards, Inc.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 10 in (250 mm), depth 90 ft (27.4 m), cased to 90 ft (27.4 m).
DATUM.--Land-surface datum is 1,431.84 ft (436.425 m) above mean sea level.
PERIOD OF RECORD.--July 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.38 ft (16.575 m) below land-surface datum, Apr. 23, 1975; lowest dry, water level not measureable, Aug. 25, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 20, 1975	55.39	Mar. 4, 1976	54.96	June 15, 1976	57.74C	Aug. 19, 1976	57.55C
Jan. 5, 1976	54.90	Apr. 29	54.68				

SPOKANE COUNTY

473240117261901. Local number, 24/42-25G1.
LOCATION.--Lat 47°32'40", long 117°26'19", Hydrologic Unit 17010306.
Owner: Henry F. Mindrup.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 8 in (200 mm), depth 135 ft (41.1 m), cased to 25 ft (7.6 m).
DATUM.--Land-surface datum about 2,320 ft (707.1 m) above mean sea level.
PERIOD OF RECORD.--February 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.29 ft (5.575 m) below land-surface datum, May 6, 1969; lowest measured, 52.39 ft (15.968 m) below land-surface datum, Sept. 19, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 9, 1975	31.24	Mar. 15, 1976	22.94	Sept. 22, 1976	37.52		

473607117322801. Local number, 24/42-6J1.
LOCATION.--Lat 47°36'07", long 117°32'28", Hydrologic Unit 17010306.
Owner: Glen Johnson.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (150 mm), depth 115 ft (35.1 m), cased to 60 ft (18.3 m).
DATUM.--Land-surface datum about 2,395 ft (730.0 m) above mean sea level.
PERIOD OF RECORD.--October 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.01 ft (10.671 m) below land-surface datum, Mar. 24, 1975; lowest measured, 39.90 ft (12.162 m) below land-surface datum, Nov. 12, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 9, 1975	35.12	Mar. 15, 1976	35.97	Sept. 22, 1976	37.17		

473924117130001. Local number, 25/44-23D1.
LOCATION.--Lat 47°39'24", long 117°13'00", Hydrologic Unit 17010305, at U.S. Highway 10 and Evergreen Road.
Owner: Mr. Boisevert.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug irrigation water-table well, diameter 48 to 18 in (1,200 to 450 mm), depth 97 ft (29.6 m), lined with brick to 97 ft (29.6 m).
DATUM.--Land-surface datum is 2,016.74 ft (614.702 m) above mean sea level.
PERIOD OF RECORD.--April 1931 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 77.85 ft (23.729 m) below land-surface datum, Apr. 8, 1950; lowest measured, 95.40 ft (29.078 m) below land-surface datum, Dec. 8, 1931.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 15, 1976	87.20	Sept. 22, 1976	92.00				

473849117275401. Local number, 25/42-14L01.
LOCATION.--Lat 47°39'40", long 117°27'54", Hydrologic Unit 17010307.
Owner: Riverside Memorial Park.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug irrigation wtaer-table well, diameter 72 mi (1,800 mm), depth 110 ft (33.5 m), lined with concrete to 82 ft (25.0 m), perforated 82 to 100 ft (25.0 to 30.5 m).
DATUM.--Land-surface datum about 1,787 ft (544.7 m) above mean sea level.
REMARKS.--Water levels used in monthly Water Resources Review.
PERIOD.--December 1941 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 81.73 ft (24.911 m) below land-surface datum, June 7, 1948; lowest measured, 101.96 ft (31.077 m) below land-surface datum, Sept. 24, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	96.51	Jan. 23, 1976	93.31	Apr. 21, 1976	91.81	July 28, 1976	96.05
Nov. 25	96.01	Feb. 25	93.86	May 20	88.87	Aug. 23	96.25
Dec. 24	93.89	Mar. 24	94.34	July 21	90.93	Sept. 22	99.80

C Nearby well being pumped.

473952117181301. Local number, 25/43-13H1.
LOCATION.--Lat 47°39'52", long 117°18'13", Hydrologic Unit 17010305, Spokane.
Owner: Dr. Henry Weitz.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 18 in (450 mm), depth 71 ft (21.6 m), lined with concrete to 70 ft (21.3 m).
DATUM.--Land-surface datum about 1,960 ft (597 m) above mean sea level.
PERIOD OF RECORD.--October 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 55.57 ft (16.938 m) below land-surface datum, June 26, 1974; lowest measured, 69.53 ft (21.193 m) below land-surface datum, Sept. 20, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 15, 1976	63.87	Sept. 22, 1976	67.05				

474011117072901. Local number, 25/45-16C1.
LOCATION.--Lat 47°40'11", long 117°07'29", Hydrologic Unit 17010305.
Owner: Inland Empire Paper Company.
AQUIFER.--Glacial sand and gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug unused irrigation water-table well, diameter 96 in (2,400 mm), depth 129 ft (39.3 m), lined with gunite cement to 129 ft (39.3 m).
DATUM.--Land-surface datum is 2,060.4 ft (628.01 m) above mean sea level.
PERIOD OF RECORD.--April 1929 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 84.56 ft (25.774 m) below land-surface datum, June 17, 1953; lowest measured, 114.53 ft (34.909 m) below land-surface datum, Dec. 8, 1931.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 7, 1975	106.07	Mar. 15, 1976	102.56	May 4, 1976	99.53	Sept. 22, 1976	106.02

474224117075901. Local number, 26/45-32J2.
LOCATION.--Lat 47°42'24", long 117°07'59", Hydrologic Unit 17010305, Otis Orchards.
Owner: John Fry.
AQUIFER.--Glacial sand and gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 8 in (200 mm), depth 155 ft (47.2 m), cased to 155 ft (47.2 m), perforated from 132 to 154 ft (40.2 to 47.0 m).
DATUM.--Land-surface datum about 2,080 ft (634 m) above mean sea level.
PERIOD OF RECORD.--November 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 116.14 ft (35.399 m) below land-surface datum, June 15, 1961; lowest measured, 133.60 ft (40.721 m) below land-surface datum, Aug. 20, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Dec. 4, 1975	127.79	Mar. 15, 1976	126.40	July 14, 1976	126.92A	Sept. 22, 1976	130.68B
Jan. 23, 1976	125.88	May 4	123.73B				

474436117245501. Local number, 26/43-19A1.
LOCATION.--Lat 47°44'36", long 117°24'55", Hydrologic Unit 17010308.
Owner: Whitworth Water District No. 2.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Dug public-supply and irrigation water-table well, diameter 78 in (1,950 mm), depth 162 ft (49.4 m), lined with concrete to 162 ft (49.4 m).
DATUM.--Land-surface datum is 1,935.91 ft (590.065 m) above mean sea level.
PERIOD OF RECORD.--November 1930 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 133.72 ft (40.758 m) below land-surface datum, Mar. 15, 1934; lowest measured, 140.35 ft (42.779 m) below land-surface datum, Nov. 13, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Dec. 9, 1975	137.76	Mar. 15, 1976	135.78	July 14, 1976	138.39A	Sept. 24, 1976	138.92A
Jan. 26, 1976	146.53A	May 3	135.46				

STEVENS COUNTY

475525117465301. Local number, 28/40-17J1.
LOCATION.--Lat 47°55'25", long 117°46'53", Hydrologic Unit 17010307, at Ford.
Owner: R. J. Seagle.
AQUIFER.--Alluvial sand and gravel of Holocene Age.
WELL CHARACTERISTICS.--Dug irrigation water-table well, diameter 36 in (900 mm), depth 20 ft (6.1 m), lined with concrete to 20 ft (6.1 m).
DATUM.--Land-surface datum about 1,790 ft (545.6 m) above mean sea level.
PERIOD OF RECORD.--October 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.45 ft (0.137 m) below land-surface datum, Jan. 23, 1974; lowest measured, 18.10 ft (5.517 m) below land-surface datum, Dec. 2, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 6, 1975	8.29	Mar. 8, 1976	8.13	June 28, 1976	8.85	Sept. 7, 1976	11.50
Jan. 8, 1976	7.97	May 26	5.62				

A Well being pumped. B Well pumped recently.

WALLA WALLA COUNTY

460014118281801. Local number, 6/35-18A1.
LOCATION.--Lat 46°00'14", long 118°28'18", Hydrologic Unit 17070102, near Walla Walla.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, water-table well, diameter 12 to 8 in (300 to 200 mm), depth 1,308 ft (398.7 m), 12 in (300 mm) diameter casing from 0 to 273 ft (0 to 83.2 m), 10 in (250 mm) diameter casing from 250 to 680 ft (76.2 to 207.3 m), 8 in (200 mm) diameter casing from 670 to 730 ft (204.2 to 222.5 m), perforations from 90 to 230 ft (27.4 to 70.1 m) and from 710 to 730 ft (216.4 to 222.5 m).
DATUM.--Land-surface datum is 670 ft (204 m) above mean sea level.
REMARKS.--Monitored depth interval from 90 to 230 ft (27.4 to 70.1 m), water level measured in 12 in (300 mm) diameter casing.
PERIOD OF RECORD.--September 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.40 ft (7.742 m) below land-surface datum, Apr. 1, 1974; lowest measured, 45.70 ft (13.929 m) below land-surface datum, Jan. 27, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	30.2	Mar. 31, 1976	26.0	July 29, 1976	32.85		
Dec. 30	26.4	June 7	30.5				

460014118281802. Local number, 6/35-18A2.
LOCATION.--Lat 46°00'14", long 118°28'18", Hydrologic Unit 17070102, near Walla Walla.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 12 to 8 in (300 to 200 mm), depth 1,308 ft (398.7 m), 12 in (300 mm) diameter casing from 0 to 273 ft (0 to 83.2 m), 10 in (250 mm) diameter casing from 250 to 680 ft (76.2 to 207.3 m), 8 in (200 mm) diameter casing from 670 to 730 ft (204.2 to 222.5 m), perforations from 90 to 230 ft (27.4 to 70.1 m) and from 710 to 730 ft (216.4 to 222.5 m).
DATUM.--Land-surface datum is 670 ft (204 m) above mean sea level.
REMARKS.--Monitored depth interval from 710 to 730 ft (216.4 to 222.5 m), water level measured in piezometer.
PERIOD OF RECORD.--September 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 144.20 ft (43.952 m) below land-surface datum, Apr. 1, 1974; lowest measured, 193.9 ft (59.10 m) below land-surface datum, Oct. 24, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	193.9	Mar. 31, 1976	157.1	June 7, 1976	188.9	July 29, 1976	176.6
Dec. 30	166.7						

460014118281803. Local number, 6/35-18A3.
LOCATION.--Lat 46°00'14", long 118°28'18", Hydrologic Unit 17070102, near Walla Walla.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 12 to 8 in (300 to 200 mm), depth 1,308 ft (398.7 m), 12 in (300 mm) diameter casing from 0 to 273 ft (0 to 83.2 m), 10 in (250 mm) diameter casing from 250 to 680 ft (76.2 to 207.3 m), 8 in (200 mm) diameter casing from 670 to 730 ft (204.2 to 222.5 m), perforations from 90 to 230 ft (27.4 to 70.1 m) and from 710 to 730 ft (216.4 to 222.5 m).
DATUM.--Land-surface datum is 670 ft (204 m) above mean sea level.
REMARKS.--Monitored depth interval from 740 to 1,204 ft (225.6 to 337.0 m), water level measured in piezometer.
PERIOD OF RECORD.--September 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 145.10 ft (44.226 m) below land-surface datum, Apr. 1, 1974; lowest measured, 194.4 ft (59.25 m) below land-surface datum, Oct. 24, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	194.4	Mar. 31, 1976	157.4	June 7, 1976	189.3	July 29, 1976	177.65
Dec. 30	167.2						

460014118281804. Local number, 6/35-18A4.
LOCATION.--46°00'14", long 118°28'18", Hydrologic Unit 17070102, near Walla Walla.
Owner: State of Washington, Department of Ecology.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled observation-test, artesian well, diameter 12 to 8 in (300 to 200 mm), depth 1,308 ft (398.7 m), 12 in (300 mm) diameter casing from 0 to 273 ft (0 to 83.2 m), 10 in (250 mm) diameter casing from 250 to 680 ft (76.2 to 207.3 m), 8 in (200 mm) diameter casing from 670 to 730 ft (204.2 to 222.5 m), perforations from 90 to 230 ft (27.4 to 70.1 m) and from 710 to 730 ft (216.4 to 222.5 m).
DATUM.--Land-surface datum is 670 ft (204 m) above mean sea level.
REMARKS.--Monitored depth interval from 1,216 to 1,308 ft (370.6 to 398.7 m), water level measure in piezometer.
PERIOD OF RECORD.--September 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 145.60 ft (44.379 m) below land-surface datum, Apr. 1, 1974; lowest measured, 195.1 ft (59.47 m) below land-surface datum, Oct. 24, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	195.1	Mar. 31, 1976	158.2	June 7, 1976	190.1	July 29, 1976	178.6
Dec. 30	166.9						

460020118225701. Local number, 6/35-12N1.

LOCATION.--Lat 46°00'20", long 118°22'57", Hydrologic Unit 17010305.

Owner: Wynn Estes.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 10 to 8 in (250 to 200 mm), depth 590 ft (179.8 m), cased to 495 ft (150.9 m).

DATUM.--Land-surface datum about 768 ft (234.1 m) above mean sea level.

PERIOD OF RECORD.--April 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 64 ft (19.5 m) above land-surface datum, Oct. 23, 1962; lowest measured, 69.7 ft (21.24 m) below land-surface datum, Nov. 22, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	123.9A	Mar. 30, 1976	46.5				

460039118185101. Local number, 6/36-9L1.

LOCATION.--Lat 46°00'39", long 118°18'51", Hydrologic Unit 17010305.

Owner: Charles Baker.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 to 10 in (300 to 250 mm), depth 1,155 ft (352.0 m), cased to 652 ft (198.7 m), lined with concrete to 939 ft (286.2 m).

DATUM.--Land-surface datum about 1,006 ft (306.6 m) above mean sea level.

PERIOD OF RECORD.--August 1946, April 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 89.00 ft (27.127 m) below land-surface datum, Apr. 16, 1955; lowest measured, 209 ft (63.7 m) below land-surface datum, Nov. 28, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 30, 1976	190						

460046118214403. Local number, 6/36-7M1.

LOCATION.--Lat 46°00'46", long 118°21'44", Hydrologic Unit 17010305.

Owner: C. Logan.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 6 in (150 mm), reported depth 680 ft (207.3 m).

DATUM.--Land-surface datum about 825 ft (251.5 m) above mean sea level.

PERIOD OF RECORD.--April 1955, February 1958, October 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.05 ft (1.844 m) above land-surface datum, Apr. 20, 1955; lowest measured, 73.05 ft (22.266 m) below land-surface datum, Oct. 30, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 30, 1976	57.4						

460229118210201. Local number, 7/36-31J1.

LOCATION.--Lat 46°02'29", long 118°21'02", Hydrologic Unit 17010305.

Owner: Walla Walla Country Club.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (300 mm), depth 1,715 ft (522.7 m), cased to 538 ft (164.0 m).

DATUM.--Land-surface datum about 872 ft (265.8 m) above mean sea level.

PERIOD OF RECORD.--April 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 72.00 ft (21.946 m) below land-surface datum, Apr. 19, 1955; lowest measured, 214.00 ft (65.227 m) below land-surface datum, Nov. 29, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 30, 1976	164						

460311118182001. Local number, 7/36-28R1.

LOCATION.--Lat 46°03'11", long 118°18'20", Hydrologic Unit 17010305, Sturm and Aubin Streets, Walla Walla.

Owner: City of Walla Walla No. 5.

AQUIFER.--Basalt of Miocene to Pliocene Age.

WELL CHARACTERISTICS.--Drilled public-supply water-table well, diameter 30 to 26 in (750 to 650 mm), depth 1,100 ft (335.3 m), cased to 803 ft (244.8 m).

DATUM.--Land-surface datum about 1,020 ft (311 m) above mean sea level.

PERIOD OF RECORD.--February 1958 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 85 ft (25.9 m) below land-surface datum, Apr. 3, 1958; lowest measured, 180.00 ft (54.864 m) below land-surface datum, Nov. 21, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 30, 1976	148						

A Well being pumped.

WALLA WALLA COUNTY--Continued

460335118172301. Local number, 7/36-27G1.
LOCATION.--Lat 46°03'35", long 118°17'23", Hydrologic Unit 17010305.
Owner: Rudolph Depping.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 10 to 8 in (250 to mm), depth 450 ft (137.2 m), cased to 357 ft (108.8 m).
DATUM.--Land surface datum about 1,100 ft (335 m) above mean sea level.
PERIOD OF RECORD.--April 1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.0 ft (0.61 m) above land-surface datum, Apr. 19, 1956; lowest measured, 60 ft (18.3 m) below land-surface datum, Nov. 29, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	52	Mar. 30, 1976	43				

460341118350701. Local number, 7/34-29C1.
LOCATION.--Lat 46°03'41", long 118°35'07", Hydrologic Unit 17010305.
Owner: Lowden A. Johnson.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 to 6 in (300 to 150 mm), depth 1,201 ft (366.1 m), cased to 610 ft (185.9 m).
DATUM.--Land-surface datum about 505 ft (153.9 m) above mean sea level.
PERIOD OF RECORD.--October 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 68 ft (20.7 m) below land-surface datum, Mar. 3, 1966; lowest measured, 116.8 ft (35.60 m) below land-surface datum, Sept. 25, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	121.82A	Mar. 31, 1976	111.67A				

460457118200901. Local number, 7/36-17L1.
LOCATION.--Lat 46°04'57", long 118°20'09", Hydrologic Unit 17070102, Veteran's Memorial Park.
Owner: City of Walla.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 to 8 in (300 to 200 mm), depth 2,728 ft (831.5 m), cased to 2,155 ft (656.8 m).
DATUM.--Land-surface datum about 1,010 ft (308 m) above mean sea level.
PERIOD OF RECORD.--April 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 49.51 ft (15.091 m) below land-surface datum, May 10, 1960; lowest measured, 166.70 ft (50.810 m) below land-surface datum, Aug. 2, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 24, 1975	146.3	Mar. 30, 1976	127.6				

460620118160601. Local number, 7/36-11B1.
LOCATION.--Lat 46°06'20", long 118°16'06", Hydrologic Unit 17070102, Walla Walla.
Owner: Roy E. Frazier.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 to 12 in (400 to 300 mm), depth 807 ft (246.0 m), cased to 170 ft (51.8 m).
DATUM.--Land-surface datum is 1,202 ft (366.4 m) above mean sea level.
PERIOD OF RECORD.--February 1947, February 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.00 ft (6.096 m) below land-surface datum, Feb. 1, 1947; lowest measured, 130.20 ft (42.428 m) below land-surface datum, Aug. 27, 1970.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Mar. 13, 1975	135.5						

WHITMAN COUNTY

463623117054501. Local number, 13/45-13L2.
LOCATION.--Lat 46°36'23", long 117°05'45", Hydrologic Unit 17060108.
Owner: Alfred Draffel.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (150 mm), depth 190 ft (57.9 m), lined with steel to 60 ft (18.3 m).
DATUM.--Land-surface datum about 2,680 ft (817 m) above mean sea level.
PERIOD OF RECORD.--May 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 71.95 ft (21.930 m) below land-surface datum, Mar. 24, 1964; lowest measured, 78.70 ft (23.988 m) below land-surface datum, Oct. 10, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 23, 1975	75.7	Mar. 10, 1976	74.6				

A Well being pumped.

464349117101101. Local number, 14/45-5F1.
LOCATION.--Lat 46°43'49", long 117°10'11", Hydrologic Unit 17060108, Pullman.
Owner: Washington State University, well No. 1.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 4 in (100 mm), depth 145 ft (44.2 m), cased.
DATUM.--Land-surface datum is 2,364.4 ft (720.7 m) above mean sea level.
PERIOD OF RECORD.--March 1935 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.52 ft (5.950 m) below land-surface datum, Mar. 19, 1935; lowest measured, 81.60 ft (24.872 m) below land-surface datum, Sept. 19, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 22, 1975	79.6	Mar. 10, 1976	79.4	June 21, 1976	80.0	Aug. 18, 1976	81.0
Dec. 31	79.5	May 5	79.8				

464408117103202. Local number, 15/45-32N2.
LOCATION.--Lat 46°44'08", long 117°10'32", Hydrologic Unit 17060108, Richie and Grand Street, Pullman.
Owner: City of Pullman, well No. 4.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled public-supply artesian well, diameter 16 to 12 in (400 to 300 mm), depth 954 ft (290.8 m), cased to 399 ft (121.6 m).
DATUM.--Land-surface datum about 2,356 ft (718.1 m) above mean sea level.
PERIOD OF RECORD.--April 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.98 ft (7.919 m) below land-surface datum, May 24, 1960; lowest measured, 63.2 ft (19.26 m) below land-surface datum, Aug. 18, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 22, 1975	61.4	Mar. 10, 1976	123.8A	June 21, 1976	128.4A	Aug. 18, 1976	63.2
Dec. 31	61.1	May 4	127.1A				

YAKIMA COUNTY

463022120095801. Local number, 12/21-27A1.
LOCATION.--Lat 46°30'22", long 120°09'58", Hydrologic Unit 17030003, Moxee Plant Quarantine Station.
Owner: Washington Department of Agriculture.
AQUIFER.--Sand of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 to 10 in (300 to 250 mm), depth 295 ft (89.9 m), cased to 295 ft (89.9 m), perforated 193 to 295 ft (58.8 to 89.9 m).
DATUM.--Land-surface datum about 1,555 ft (474.0 m) above mean sea level.
PERIOD OF RECORD.--May 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 200 ft (61.0 m) below land-surface datum, Jan. 15, 1966, Feb. 24, 1966, Mar. 28, 1966, Apr. 28, 1967; lowest measured, 218 ft (66.4 m) below land-surface datum, Mar. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 9, 1975	217	May 10, 1976	218				

463200120462002. Local number, 12/16-13D2.
LOCATION.--46°32'00", long 120°46'20", Hydrologic Unit 17030003.
Owner: Herke Brothers.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled test water-table well, diameter 8 in (200 mm), depth 130 ft (39.6 m).
DATUM.--Land-surface datum about 1,800 ft (549 m) above mean sea level.
PERIOD OF RECORD.--March 1951 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level meaured, 50.37 ft (15.353 m) below land-surface datum, June 15, 1951; lowest measured, 122.15 ft (37.231 m) below land-surface datum, Jan. 11, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 1, 1975	108.9B	Jan. 5, 1976	103.4A	Mar. 9, 1976	101.6	July 1, 1976	101.3
Nov. 20	104.3						

A Well being pumped.
B Well pumped recently.

463212120432301. Local number, 12/17-17C1.
LOCATION.--Lat 46°32'12", long 120°43'23", Hydrologic Unit 17030003.
Owner: R. C. Cornelius.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 8 in (200 mm), depth 243 ft (74.1 m), cased to 166 ft (50.6 m).
DATUM.--Land-surface datum about 1,562 ft (476.1 m) above mean sea level.
PERIOD OF RECORD.--June 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.60 ft (0.792 m) above land-surface datum, May 22, 1962; lowest measured, 95.4 ft (29.08 m) below land-surface datum, Sept. 14, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 1, 1975	66.4	Mar. 9, 1976	24.1				

463226120412901. Local number, 12/17-9J3.
LOCATION.--Lat 46°32'26", long 120°41'29", Hydrologic Unit 17030003.
Owner: Walter McInnes.
AQUIFER.--Basalt of Miocene to Pliocene Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (100 mm), depth 479 ft (146.0 m), cased to 430 ft (131.1 m).
DATUM.--Land-surface datum about 1,460 ft (445 m) above mean sea level.
PERIOD OF RECORD.--January 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 66.80 ft (20.361 m) below land-surface datum, July 20, 1953; lowest measured, 180.82 ft (55.114 m) below land-surface, Aug. 28, 1970.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 1, 1975	152.2	Jan. 5, 1976	109.7	Mar. 9, 1976	92.1	July 1, 1976	93.78
Nov. 20	128.2						

464445120360001. Local number, 15/18-32K3.
LOCATION.--Lat 46°44'45", long 120°36'00", Hydrologic Unit 17030001.
Owner: Wenas Valley Grange.
AQUIFER.--Glacial gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled institutional water-table well, diameter 8 to 6 in (200 to 150 mm), depth 85 ft (25.9 m), cased.
DATUM.--Land-surface datum about 1,460 ft (445 m) above mean sea level.
PERIOD OF RECORD.--June 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.73 ft (11.500 m) below land-surface datum, Oct. 23, 1957; lowest measured, 74.14 ft (22.598 m) below land-surface datum, Nov. 6, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Nov. 18, 1975	49.3A	Jan. 6, 1976	47.1	July 1, 1976	49.1		

A Well being pumped.

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